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# DEVELOPMENT DIGEST

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# DEVELOPMENT DIGEST

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Patricia W. Blair, Editor; Pushpa Nand Schwartz, Associate Editor
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CONTENTS

Volume V - Number 3 October 1967

EXTERNAL AID: SOME CONSIDERATIONS

HOW MUCH AID IS NEEDED? 1
John Pincus

THE LESSONS OF THE MARSHALL PLAN 7
Theodore Geiger

EXTERNAL AID: FOR PLANS OR PROJECTS? 11
H. W. Singer

PROJECT VERSUS PROGRAMME AID: ANOTHER VIEW 16
Alan Carlin

AID THAT WORKS: A REVIEW 22

USE OF WATER RESOURCES

WATER FOR FOOD 25
B. R. Sen

MORE CROP PER DROP: A PICTURE ESSAY 30

WHAT IS WRONG WITH INDIA'S IRRIGATION PROJECTS? 35
K. M. Bhatia

WATER REGULATION AND LAND USE: A COLOMBIAN EXAMPLE 39
Joseph R. Thome

COMMON SENSE IN COMMUNITY WATER SUPPLY 45
D. A. Okun and F. E. McJunkin

LOW-COST RURAL WATER SYSTEMS IN GUATEMALA 50
Danilo Aris

FINANCING PUBLIC UTILITIES 54
World Bank Staff

FISCAL POLICY

SAVING THROUGH TAXATION— REALITY OR MIRAGE? 57
Stanley Please

THE EVOLUTION OF PUBLIC FINANCES 63
Richard S. Thorn

IMPROVEMENTS IN TAX ADMINISTRATION 72
R. J. Chelliah

THE ROLE OF EXPORT TAXES 76
Richard Goode, G. E. Lent, P. D. Ojha

TAXING REAL ESTATE EFFECTIVELY: A PROPOSAL 83
John Strasma

THE SALES TAX IN HONDURAS 87
John F. Due

BOOK REVIEW 90

PROGRAMS FOR YOUTH SERVICE

YOUTH SERVICES: A SURVEY OF EXPERIENCE 93
C. Rossillion

GOVERNMENT SUPPORTED VOLUNTEERS: CHART 98

THE ETHIOPIAN UNIVERSITY SERVICE 99
David C. and Frances F. Korten

BIMAS: AGRICULTURAL STUDENTS AS EXTENSION AGENTS 106
E. A. Roekasah and D. H. Penny

THE SCOPE FOR A YOUTH LABOUR SERVICE 112
Christian Uhlig

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# EXTERNAL AID: SOME CONSIDERATIONS

## HOW MUCH AID IS NEEDED?

John Pincus

[ The answer is, "all they can get." But the gap between rich and poor countries is social, political, psychological, and demographic, as well as economic. A greater role for behavioral science in the planning and review of economic aid would probably be beneficial. ]

How much aid do developing countries need? A good deal of effort has been put into finding the answer to this question. Techniques for measuring the aggregate requirements of less developed countries for foreign capital have become increasingly sophisticated. I suggest, however, that further refinements of the aggregate gap analysis are virtually valueless as guides to policy. Nor are the existing estimates of much value.

### Multiple Gaposis

The gap that separates rich and poor countries cannot be encompassed by any computations of the margin that separates savings from investment targets or exports from import requirements. This is not to say that it lacks any measurable dimensions, but, rather, that the gap is multidimensional:

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1) The aid requirement is usually discussed in terms of an economic gap that can roughly be measured by the difference between average incomes in developing and industrial countries.

2) Another gap is social. The developing countries aspire to build modern urbanized societies, moving from status to contract in social relations.

3) A third gap is political, reflecting a desire for mass participation in a stable political system, such as a parliamentary democracy or some form of state socialism.

4) A fourth gap is psychological, built from a consciousness of representing nations that are not "modern," of belonging to social groups that maintain, despite themselves, feelings of inferiority born from the awareness of educational and cultural deprivation.

5) The fifth gap, if we can call it one, is the gap in population growth rates. Governments of developing countries would generally prefer to bring population growth down, but individuals do not necessarily share this opinion, despite its adverse effects on the quality of life and on economic standards.

In terms of costs, the population gap is probably the cheapest to fill. It has been estimated that investments in birth control in India are some one hundred times as profitable as investments in production. But the population gap may be the hardest of all to fill, in view of the existence of the first four gaps.

## The Economic Gap

How much it would cost to fill the economic gap depends on the time horizon. Filling it halfway by raising per capita incomes at once to, say, $1,000 a year, the bill would come to about $1,400 billion—a sum roughly equal to the combined annual gross national product of the industrial countries. If we rule out levels of philanthropy that reduce donors' incomes to zero, we could work out some equal average level of world income at about $630 per capita (1963); this would require the rich countries to transfer about $600 billion annually to poor countries. My reason for introducing these fantasies is simply to demonstrate that, if the goal is approximate equality of income, sights must be set very high indeed.

If we forgo the vision of instant equality and aim only at equality with today's levels of income in rich countries after a generation, then, on the average, per capita income would have to increase at the rate of 11.5 percent annually over a twenty-year period, nine

times faster than the current rate. Even to reach today's income levels by the year 2017, per capita GNP in the poor countries would have to increase by 4.2 percent annually, three times as fast as the present average.

How much foreign capital would it take to hit the 20-year or 50-year target? Under the usual assumptions, average annual aid required to bring less developed countries' to rich countries' 1965 per capita income levels by 1986 would amount to $550 billion, increasing throughout the period. To reach the same target by 2017, aid would have to average about $65 billion annually before declining to zero (somewhere between 1995 and 2005, depending on the rate of population growth).

Realistically speaking, there isn't enough money to fill the economic gap in any reasonable time period. Even to fill it halfway within a generation is impossible in practice.

For those who remain unconvinced, let us look at the "success" stories" of economic development—thirteen countries whose output has grown at more than 6 percent annually since 1950. They are Greece, Yugoslavia, El Salvador, Jamaica, Mexico, Nicaragua, Trinidad, Iraq, Israel, Jordan, South Korea, Thailand, and Taiwan. Most of these countries are small, with a population of less than 20 million. Most have either received massive US aid—four to fifteen times the worldwide average per capita—or else struck it rich through minerals, tourism, or staple exports. Finally, measured by comparative export growth rates, they have been much more competitive in world markets than less developed countries as a whole.

These success stories (with all the problems they still face barely hidden behind the facade of aggregate growth rates) account for only about 6 percent of the people who live in developing countries. To have covered the remaining 94 percent with the same amounts of aid per capita, aid appropriations from the US and other donor countries would have had to be about three and one half times higher than they actually were over the past 16 years. But aid outlays, after rising sharply from the early 'fifties through the early 'sixties, seem to have stabilized. The inference is that, in view of other claims on rich nations' resources, present aid levels reflect aid's value to society as perceived by the donors.

As far as the economic gap is concerned, then, there seems no practical way to fill it with the amount of aid that would be needed from the recipients' viewpoint; from the donors' standpoint, there seems no strong urge to raise the ante. How much aid to the developing countries need? The answer seems simple. All they can

get (except, as in the case of some African nations today, when countries are too underdeveloped to handle large sums in a hurry).

Some Shibboleths

Donors apparently are much less concerned in practice than in theory about the possible dangers of a world permanently divided into rich and poor nations. Recipients, on the other hand, are much less worried in practice than in theory about the possible harmful social and political effects of excessive dependence on aid. In fact, they are currently bargaining for preferential trade access to the markets of industrial countries and for higher commodity prices through international agreements. Both of these, if achieved, are virtually guaranteed to cement their economic and political dependence even more closely than aid, despite the apparently automatic and market-determined nature of the transfers.

Nor have the less developed countries invariably demonstrated as much zeal in pursuit of domestic reforms as they have toward revisions in rich countries' aid and trade policies. The present barriers to less developed countries' growth include not only external constraints (tariff structures that discriminate against less developed countries; immigration controls; restrictions on capital movements; high-cost aid tying; etc.) but also domestic ones (excessive protection; overvalued currencies; ideological attachments to government controls that appear excessive in light of limited administrative skills; fondness for investments that are more monumental than productive; a reluctance to accept foreign private investment; domestic price systems that encourage high-cost manufacturing and discourage agricultural development).

A major weakness in the structure of aid is that the capacities of the rich countries' private sectors are not fully enlisted. It is clear that, if material progress is the aim, the rich countries have no instrument so effective as the modern corporation. Yet ideological hostilities and ignorance on both sides have prevented any significant progress. US annual manufacturing investment in all developing countries combined is less than its annual investment in Canadian manufacturing. The total of all rich countries' private investment in poor countries is somewhat less than the annual domestic private investment of Belgium.

Even if all these defections from economic grace are recognized as such, however, we don't know whether the remedies proposed are really remedies, really necessary for promoting economic development. Overvalued currencies? Look at the ruble—or, some might say, the dollar. Pervasive government controls over the private sector? Japan's development was built on it. Excessive dependence

on handouts? Taiwan, Israel, South Korea, and the other success stories couldn't have gotten anywhere without passing through a "beggar" stage. Doubts about foreign capital? Mes chèrs collègues!

Another concept that has contributed to misspecifying the economic gap is that of "absorptive capacity." The inability of economically backward nations to use massive capital transfers effectively has raised the claim that less developed countries are now getting all the aid they can "absorb." This expression involves a good deal of humbug. In the cases cited earlier, where aid was both massive and effectively administered, most people's preconceptions about absorptive capacity for investment have had to be jettisoned.

We often hear that aid is used unwisely in underdeveloped countries. Of course it is. If less developed countries could invest capital as effectively, maintain machinery and equipment as well, administer public and private enterprises as smoothly, they would be rich, not poor. Waste and inefficiency should be looked on as normal companions of an accelerated development effort, as elements that can only be reduced gradually. Once we realize that different standards of performance are necessary for less developed countries, then absorptive capacity becomes a flexible concept indeed, even if confined solely to investment and technical assistance.

## And All the Other Gaps

So far, I have talked as if underdeveloped countries needed only economic aid. This is true only in the restricted sense that filling any one gap has implications for the state of the others.

But can, or should, rich countries address themselves directly to the social, political, psychological, cultural elements of the gap, rather than indirectly through economic aid?

Economic instruments, if properly used, may catalyze the social changes that lead to multidimensional development. To attempt to operate directly on social organizations and attitudes in a world where nationalism reigns and xenophobia is the order of the day would be impractical. In the short run, it may be more practical to try to use economic aid deliberately, with the advice of the behavioral scientists, as a lever to affect the social matrix.

But this proposal has two obvious disadvantages. First, it makes heavy demands on the behavioral scientists—are they confident enough of their knowledge to be sure which catalysts will be positive and which negative in terms of any stated set of goals? Second, if

social revolutions are held necessary in some instances, are their political consequences likely to be acceptable to aid donors? Economic growth and political stability are often inconsistent. Is it true (as I doubt) that political stability in less developed countries is always preferable to political instability? I venture to guess that our ability to predict correctly on this range of issues is limited.

However, a greater role for behavioral science in the planning and review of economic aid would probably benefit the long-run interests of donors and, at the very least, make clear to recipients some of the implicit inconsistencies between their modernizing objectives and their existing value systems.

## The Communications Gap

The ultimate gap, of course, lies in rich and poor countries' perceptions of the issues. Donors hypothesize a relationship among political stability, economic growth catalyzed by aid, and donors' self-interest. Then they try to limit the application of this hypothesis by invoking absorptive capacity and less developed countries' economic solecisms to rationalize inadequate aid levels.

Recipients, on the other hand, have tended to follow the normal and convenient device of putting the blame on Dad. If only aid were bigger, trade concessions greater, rich countries less neo-colonial, then, brothers, then.....

In fact, of course, all parties are to some extent at fault—the rich too stingy and too free with avuncular ideology, the poor too reluctant to abandon their cherished stereotypes for the harsher reality. We will need great vision on both sides to bridge this ultimate gap of communication, the most delicately fashioned bridge of all.

[ Excerpted from an article in the September-October 1967 issue, Columbia Journal of World Business, Graduate Business School, Columbia University, New York. ]

# THE LESSONS OF THE MARSHALL PLAN

Theodore Geiger

[ The postwar European Recovery Program probably contains more negative lessons than positive for current aid programs. However, a "passive" posture by aid donors might encourage the self-responsibility that was so crucial to the success of the earlier program. ]

The celebration of the 20th Anniversary of the Marshall Plan last June brings to mind the analogies that are often drawn between the European Recovery Program (ERP) of 1948-52 and present efforts to assist the development of Asia, Africa, and Latin America. Disheartened by the limited accomplishments and seeming interminableness of existing foreign aid programs, people on both sides of the aid relationship have, during the past decade, repeatedly urged new "Marshall Plans" as the way to overcome these frustrations. But would this remedy really be effective?

It is essentially three features—effective intergovernmental cooperation, massive funds provided for a short specified period, and dedicated enthusiasm—that the proponents of a new Marshall Plan seek to recapture today. There can be no doubt that they were major factors in the success of the ERP. However, they were dependent on other, more fundamental characteristics of the participating countries. These basic factors have not yet evolved in Asia or Africa, and are only beginning to develop in Latin America.

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The postwar societies of Western Europe still preserved the capabilities and skills that they had developed to unprecedented heights during preceding centuries. Their economies were still largely industrialized. They had an adequately skilled labor force, knowledge of mass-production techniques, and a readily reconstituted network of inter-industry relationships and of ancillary financial, commercial, technical, and other essential services. The farmers knew how to use efficient agricultural techniques.

The Europeans could cooperate effectively with one another and with the United States because they possessed the self-confidence derived from their long-standing sense of national identity and from the successful exercise of national sovereignty both domestically and in their external relations. The Europeans could spend large amounts of U. S. aid rapidly and effectively because they already had the necessary capacity for decision making and administration and the developed industrial and agricultural systems to absorb additional resources quickly and productively. The Europeans had the requisite sense of dedicated enthusiasm and the motivation to innovate because the relevant values and behavioral norms had long been integral elements of their inherited cultural traditions. In these circumstances, all that was needed for European recovery were sizable injections of economic resources over a short period. American grants and loans constituted this temporary "pump-priming."

## Is the Marshall Plan Analogy Relevant?

In contrast, the task confronting the newly independent nations of Asia and Africa and the older nations of Latin America is not rehabilitation of an existing economic system but fundamental social change.

For Asia and Africa, social change involves a gigantic transformation. It means replacing many different varieties of traditional, homogeneous, stable, low-productivity agrarian societies with new types of modern, diversified, and much more productive market-oriented societies. For Latin America, which has always been a part of Western civilization, it means a less profound but, nonetheless, difficult modernization process to overcome the inhibiting effects of its late-Medieval Iberian heritage and of four-and-a-half centuries of comparative stagnation.

Additional economic resources from outside is one—but only one—of the factors that are missing or inadequate and that crucially affect the nature and rate of social change in Asia, Africa, and Latin America.

In these circumstances, use of the Marshall Plan analogy has probably done more harm than good for Western development assistance efforts in the past fifteen years.

If the Marshall Plan experience holds lessons for current development assistance efforts, they point more to doing and expecting the opposite of what was done and expected in the ERP than to copying its distinctive characteristics. To be effective, aid to Asia, Africa, and Latin America must be conceived and established as a continuing activity without specifying terminal dates in advance. A crash program for a fixed period of years, even as many as ten, is quite inappropriate to the time spans of the development and modernization processes. This does not mean that more development aid would be undesirable or that, in time, it could not be spent effectively by the recipients themselves. It does mean that the additional resources that could be efficiently and quickly absorbed are substantially less for most recipient countries than was the case with the participants in the ERP.

Equally necessary is a recognition that the self-help principle, upon which the United States quite rightly insists, has implications not only for the aid recipients but also for the donors. Hence, preference should be given to fostering the self-reliance and self-responsibility of the recipient countries over the longer term, rather than to maximizing by any means their absorption of development assistance funds in the shorter term.

## Self-Help Needs Passive Donors

Implicit in all of these negative lessons is a positive injunction of central importance. If the factors responsible for the success of the ERP can be summed up in a single conclusion, it is the crucial significance of a capacity for initiative and self-responsibility on the part of the aid recipients. The European nations already possessed it at the time of the Marshall Plan; the countries of Asia and Africa, and even many in Latin America, have still to develop it. The major function of development assistance is to help them to do so.

In this respect, today's donors are confronted with a dilemma that did not arise in the Marshall Plan. The United States and other aid-giving nations engage in so activist and directive an approach in part because the great majority of recipient countries in Asia, Africa, and Latin America do not have sufficient capabilities of their own to initiate, program, and implement development strategies. But the eagerness and manifest ability of the donors to carry on these functions for the recipients inhibit the latter from developing their own capacity for initiative, decision making, administration, and self-responsibility.

It would be preferable for the donors, particularly the United States, to take a passive attitude. The U. S. should limit itself to responding to the initiatives of the recipient countries, specifying in advance, if it wishes, the general kinds of programs and projects it is prepared to finance and the terms and conditions of its aid. Aid missions could then be reduced to small liaison groups whose functions would consist only of giving preliminary informal reactions to proposals initiated by the recipient governments and transmitting their formal requests for funds to Washington. The help that many recipient countries will require in preparing development plans and carrying out development projects should no longer be provided on a continuing basis by U. S. government officials nor should the latter persist in the practice of recruiting and hiring non-governmental experts for assignment to recipient governments. Instead, the recipient governments should be granted full responsibility for hiring directly the necessary specialists from North America, Western Europe, Japan, Israel, and other nations capable of supplying them, perhaps with the aid of a U. S. -based technical assistance advisory service or development advisory and research institute.

This reversal of "posture" would not, of course, be a panacea for the basic dilemma. It can only be lived with more or less constructively or destructively, as the case may be—not solved. But such a change in the "posture" of the donor nations would not only give greater reality to the self-help principle; it would also diminish significantly the political and psychological strains in the relationships between North America and Western Europe, on the one hand, and Asia, Africa, and Latin America, on the other.

[ Excerpted from "The Lessons of the Marshall Plan for Development Aid Today, " Looking Ahead, Washington, D. C. : National Planning Association, Volume 15, Number 4 (May 1967). ]

# EXTERNAL AID: FOR PLANS OR PROJECTS?

H. W. Singer

[ In the future, consortia of donors may provide increased scope for plan aid—which is the economist's instinctive preference. But there is room for project assistance, too, especially from multilateral agencies. ]

External financial aid to underdeveloped countries is sometimes linked with specific projects, and sometimes given in general support of annual budgets or longer-term plans without reference to specific projects. There is also a great variety of forms intermediate between these two categories. For example: aid to specific projects within the farmework of a development plan; earmarked aid to be drawn on only for projects agreed on subsequently; support for groups of projects rather than individual ones; aid for specified import requirements (food, spare parts) not linked to specific projects, etc.

## An Element of Illusion

In discussing some issues arising from this wide variety of forms of aid and aid policies, a distinction has first to be made between the ostensible tying of project aid to specific projects and the projects which the aid actually finances. If the project to which the aid is ostensibly tied is a "high-priority project" which the recipient would otherwise have undertaken with his own

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money, then obviously the aid given enables the recipient to release his own money from Project A (now aid-financed) and use it to add a new Project E to his original development plan or expenditure schedule. This could mean that, while the donor ties his aid to a carefully screened Project A, his aid may really go into Project E, about which he may know nothing and which may not be the kind of thing he would want to support. In effect, he has given plan aid without knowing it.

This situation is basically unsatisfactory. There is an element of make-believe in that the donors of aid, as well as the parliaments and citizens of donor countries, believe or pretend that they are doing one thing when in fact they are doing something quite different.

There may be good reasons for this situation. To tie the aid to the high-priority Project A may be politically necessary in order to rally support for aid. It may provide the opportunity to render technical assistance in connection with the high-priority project and, indeed, to improve it or redesign it fundamentally, which may be more important for the development of the recipient country than to give minute attention to the marginal Project E. Choosing Project A may enable the donor to tie his aid to the supply of his own equipment for it, while Project E may not need such equipment.

Nevertheless, if specific project aid is viewed not only from the point of view of expedience or popularity but also as a contribution to the long-run development of the assisted country, then it is myopic of the aid giver to limit his attention, analysis, and technical assistance to Project A. He should be equally interested in Projects B, C, D, and E—perhaps specially E, since this is the real result of his aid. If the aid must be tied for balance-of-payment reasons, it would still be better to seek agreements with other aid givers so that the receiving country would be able to buy in the cheapest market while the balances of payments of the individual donor countries would benefit more or less in proportion to the aid which they give. It would also be more rational to tie the aid to specific items of equipment (or the products of specific depressed areas in the aid-giving country), which the recipients could then use in whatever projects and fields seemed most sensible.

So far, we have assumed that the aid-financed Project A is truly a high-priority project which the country would and should have carried out with its own money if the aid had not been forthcoming. It is possible to imagine a worse case, where Project A is not high-priority but is put forward only because it is the kind of project which attracts aid from the donor. The best that can be hoped for in this case is that the value of the aid (which could not have been

obtained for any other project) will outweigh the negative effect of the diversion of the recipient country's own resources away from its real priority. This will normally be the case, especially if the aid is on soft terms. But it is hardly an ideal state of affairs, and certainly does not maximise the contribution of aid to development.

If the donor country believes that Project A is the top priority, but the recipient does not, then the situation is fundamentally changed. Where there is some disagreement about priorities, specific project aid may be the only way in which aid can be forthcoming at all. Little self-deception is involved. The fact that Project A (which is not included in the country's own priorities) will be carried out only because aid is available exclusively for it, but not for other projects, ceases to be a vice and becomes a virtue—assuming that the aid-giving country's judgment of the receiving country's needs is better than that of the receiving country itself.

Sometimes, specific project aid is given in order to give effective general plan aid. The tying of aid to specific projects may be a convenient way of helping, or forcing, the assisted country to translate an acceptable development strategy into concrete projects. Without projects, a general plan, however good, cannot be carried out.

The element of illusion inherent in the specific project approach can also be avoided if the donor country or agency ties its aid to the marginal project (Project E) which the receiving country is able to add to its plan as the result of the additional aid it is getting. It presupposes a degree of sophistication on the part of the donor to expect him to tie his aid to a "marginal" project instead of insisting on identification with a "high-priority project." It also presupposes a high degree of sophistication in the planning process of the aid-receiving country, which then must draw up not one plan but two or more: one without aid and one or more predicated on different amounts of external aid. Indeed, one of the main reasons receiving countries tend to prefer to know they can count on a certain amount of plan aid is that they can thereby economise on scarce planning capacity.

## The Limits of Project Aid

But the major difficulty of "identifying" aid with any project, whether priority or marginal, is somewhat different. The whole point about planning is that the developmental impact of any good pattern of expenditure and policy is maximised if these expenditures and policies are properly related to each other and taken as a whole. If the planning process in the country is at all meaningful, Plan II

(prepared on the assumption of some aid, and hence larger) will differ from Plan I (prepared on the assumption of no aid) not just by the addition of one or two projects. There will be projects in Plan II which are not in Plan I, but there will also be projects in Plan I which are not in Plan II. Moreover, while both plans may contain identical projects, these may well be carried out with a different technology, on a different scale, and on a different time schedule in each place. Thus, the identification of a "marginal project" is really inherently impossible except in rare circumstances. In the final analysis aid can only be given on a "macro" basis, to result in additional output in terms of value, and not on a "micro" basis in terms of specific projects.

We have mentioned before that project aid, especially if attached to a high-priority project, may serve as a convenient handle for improving the project or rendering technical assistance. But this advantage may be offset by the possibility that project discussions and differences of opinion concerning specific projects may result in delays and pipeline accumulations, so that the actual flow of aid may be smaller than it would have been with plan aid not tied to projects. Even the argument that project aid is good because it forces the receiving country to come up with concrete projects finds its counterpart in the argument that planning aid is good because it forces the receiving country to think about the necessary interrelation of its projects and its total development policies.

Aid tied to specific projects is an inducement to receiving countries to think of development in terms of concrete projects—i.e., specific types of net investment of physical capital. Development is, of course, much more than that; in fact, many expenditures classified as current, or consumption, are much more developmental than expenditures classified as "projects" or capital expenditure. From this latter point of view, plan aid—and, even more, annual budget aid—is clearly preferable if the donor agrees with the recipient on developmental policies and priorities. Plan aid also seems to be more popular among the receiving countries than project aid.

On the other hand, development plans in some countries may be highly unstable, changing frequently along with changes of government. Here project aid has an advantage over plan aid, because the most important projects will, or should, figure in all the plans. One suspects that much of the preference of donors for project aid has its real, if unacknowledged, basis in some mistrust of the recipient's planning stability.

Our discussion has not resulted in any clear-cut statement on the superiority of plan aid over project aid, or vice versa. That

was not to be expected. The rather tangled relationships that have been discussed reflect the disorderly state of the whole business of aid. At present, there certainly seems room for both kinds of aid, though there seems some justification for the economist's instinctive preference for plan aid.

There are some indications that a tidier period is on the horizon. The next phase of the aid business may well be increased scope for plan aid through aid consortia, combined with technical planning and project assistance to developing countries, with some emphasis on multilateral assistance. This could result in greater effectiveness of aid than uncoordinated project aid.

[ Excerpted from The Economic Journal, London: Volume LXXV, Number 299 (September 1965), pp. 540-545. ]

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# PROJECT VERSUS PROGRAMME AID: ANOTHER VIEW

Alan Carlin

[ Project aid carries added restrictions on its use, which has many advantages and some costs. By "packaging" projects, it is even possible to exercise useful "macro" influence over recipients' fiscal and monetary policies with project aid. Donors' aims determine the choice between a project or program approach. ]

H. W. Singer has re-opened one of the longest-standing controversies in the administration of foreign aid. His paper is almost entirely concerned with pointing out some (but by no means all) of the problems with project aid, however. Little is said about the drawbacks of programme aid. The project-programme question is much more complex than Singer suggests.

Project aid can be defined as assistance whose disbursement is tied to capital investment in a separable productive activity. Programme aid is assistance whose disbursement is tied to the recipient's expenditures on a wide variety of items justified in terms of the country's total needs and development plan rather than in terms of any particular project. The important distinction is that project aid carries added restrictions on its use.

The recipient government will almost always prefer programme aid because of the increased flexibility it confers. But the relevant viewpoint

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is that of the donor, who will largely determine the form of external assistance. The interesting question, from an economic standpoint, is which approach would be more suitable if the donor's domestic political considerations were ignored.

The objective of this paper is to set out the more important considerations that a rational donor should take into account in deciding whether it is more advantageous to give aid as project or programme assistance. A convenient way of reviewing the arguments on each side is to look at the additional benefits and costs of the restrictions added by the project approach.

Micro-influence

1) Direct control over the recipient in the selection of projects under certain circumstances. As many have pointed out, the fungibility problem—which arises because the particular project with which the aid is identified may or may not represent the actual use of the added funds provided by the aid—greatly limits the effectiveness with which project controls can influence the recipient's allocation of resources. This problem has often been overemphasised by economists, however. If the donor can find what he considers worthwhile projects neglected by the recipient, he can influence the recipient's allocation of resources. A number of aid donors have been able to do so. In the early 1960s, for example, the International Development Association attempted to locate a number of such projects in India, and chose projects in the areas of highway development, telephone service, irrigation and drainage to receive credits.

In the extreme case, all of a donor's projects can be considered marginal. This situation occurs most commonly when the recipient country cannot meet all of its essential "maintenance imports" out of its own foreign-exchange holdings or earnings. India provides a good illustration. Her debt repayments and imports of food, essential consumer goods, and the raw materials needed to keep existing industrial capacity in production exceed her free foreign exchange. Failure to meet the more basic of these requirements would have worse political and economic repercussions than failure to expand capacity, so that it is probable that the latter would be sacrificed should India have to choose between the two. As a result, the use of project aid can substantially influence the allocation of India's developmental resources. No project requiring substantial amounts of foreign exchange will normally be undertaken without some public or private international financing.

2) Greater opportunity to influence both the design and implementation of the projects nominally financed by the aid donor,

whether or not they happen to be the projects that aid actually makes possible. Influence can be exercised in a number of ways: by insisting on higher standards of project preparation, by introducing technical aid as part of the project, by imposing various conditions on the execution of the project, or, in the extreme case, by partial supervision of the project itself. In many cases technical aid and other influences do more than improve the economics of a project; without them, the project may not be economically viable.

Investment in physical capital is only one essential requisite of industrial growth; it is also necessary to develop various skills, particularly managerial skills, to use the capital efficiently once the physical plant is built. Project aid provides the donor with some leverage for insisting that this form of technical aid be accepted in the face of possible recipient reluctance.

3) Increased ease of influencing the recipient's policies in those sectors of the recipient's economy for which project aid has been made available. This can often be done by arguing that changes in these policies are necessary for the success of the project. For example, in the case of a railroad project, the donor might be able to insist on changes in the railroad's rate structure, or, in the case of a fertiliser plant, a change in fertiliser prices or distribution practices.

All three of these benefits involve the exercise of micro-, or project, influence over the recipient. They are undoubtedly the most important potential benefits of project lending. It is not easy to create an organisation sufficiently competent to exercise much useful influence, and, in practice, few donors do. Failure to do so greatly diminishes the case for the project approach.

Other Benefits

4) Incentives for improving the quantity and quality of projects. This is desirable not only because of the favourable economic effects of the additional projects that may be engendered but also because it provides, to some extent, a meaningful measure of the recipient's performance and "absorptive capacity" as an objective guide to donors in setting country aid levels. The country that is able to increase its generation of acceptable projects may be able to increase its share of available funds. This can provide a significant built-in incentive to recipient countries, in marked contrast to programme aid, where the incentives normally work in the opposite direction. (The larger the balance-of-payments or budget deficit, the larger the aid under usual practice.)

5) Clearly, project aid, especially if attributed to carefully chosen "impact" projects, increases the publicity value of the donor's aid.

6) Increased access to information on sectors of the recipient's economy in which projects are financed. This can be useful for suggesting specific conditions to attach to the approval of the project, conditions that will improve the efficiency of the sector concerned. It can also form the basis of a more general analysis of the development prospects of the country and, therefore, the desirability of giving it aid in the first place.

7) If aid is also tied on a country-of-origin basis, a somewhat less adverse effect on the balance of payments of the donor nation. Although the recipient usually suggests that aid be nominally ascribed to projects where the largest percentage of imported goods would have been purchased from the aid giver in any case, it is likely that a somewhat higher percentage of such goods will be purchased under a project loan than under a programme loan for maintenance imports. From a long list of maintenance imports, from apples to oil, it is fairly simple for the recipient to pick out goods that would normally be purchased from the aid giver anyway.

8) It has often been alleged that the project approach is also less likely to lead to a "politically frozen" aid level. A programme-aid level maintained over several years can take on a political status that makes for inflexibility. Under project aid, at least theoretically, either slow submission of good proposals or slow utilisation of funds already obligated will automatically result in lower assistance levels, besides signalling inadequate performance by the recipient country.

## Costs of the Project Approach

The potential costs of project aid can be grouped into the following categories, roughly in order of importance:

1) The most important potential cost of giving aid in the form of projects is the loss of bargaining power over aggregate economic and political policies of the borrower. If the donor's objective is the economic development of the recipient, the donor will often be most interested in affecting fiscal and monetary policies. To the extent that project aid reduces the potential leverage per dollar of aid over such policies, this is indeed an important consideration. Such a reduction might occur for two reasons. First, project aid may be worth less to the recipient government, especially if there is a squeeze on maintenance imports. Second, any attempt to exercise micro-, or project, influence will tend further to decrease the

attractiveness of the aid to the recipient, and hence the potential macro-leverage available per dollar.

However, it is quite possible to exercise macro-influence with project aid, preferably by bargaining over groups of projects or project packages. To some extent micro- and macro-influence exercised through project assistance are complements rather than substitutes for each other, since the latter can be partly justified by the "normal" banking practice of attempting to ensure the creditworthiness of a given project, and hence may not be considered as great an interference in the internal affairs of the recipient country as it might otherwise.

2) Project aid undoubtedly introduces a number of biases into country development. Perhaps most important, it favours building new capacity rather than making better use of existing capacity. The result is likely to be overbuilding of infrastructure and expansion of the public sector. Once again, perhaps the best example is India. Because her free foreign exchange and non-project aid receipts are less than her non-project needs, there is considerable underutilisation of industrial capacity. Yet she continues to accept project-tied aid to build new industrial capacity, some of it in the same industries which are now suffering from a shortage of maintenance imports.

3) Intergovernmental problems arising from the bureaucratic frictions created by detailed supervision of project formulation and execution. These frictions are often of the most non-substantive, petty type. They are chiefly important because they result in an erosion of host-country willingness (and ability) to agree to restrictions on its freedom of action implied by aggregate performance criteria.

4) Increased costs of aid administration.

5) Increased real cost (to the recipient nation) of borrowing. In the case of country-tied aid, the recipient is forced to buy some items for a given project from a country other than the lowest-cost producer. If the objectives of the donor include a concern for the economic welfare of the recipient, this may represent a cost to the donor as well.

The potential costs of project aid are likely to be present even where the technical expertise and administrative efficiency associated with project aid are beyond reproach. An additional set of costs emerge if there are administrative or analytical failures on the part of the aid giver. Since it is doubtful whether any organisation can avoid all mistakes, costs in this second category ought also

to be considered. In particular, they can add to the cost of aid administration and increase intergovernmental frictions.

The magnitude of many of these costs also depends on the assiduity with which the aid giver attempts to exercise influence over the recipient. There are no costs in terms of bargaining opportunities forgone if no bargaining would be attempted anyway. Costs arising from the frictions involved in project scrutinisation will be unimportant if the review of project proposals and the monitoring of project implementation is largely permissive.

## Conclusions

The particular objectives of the donor in giving aid, and to some extent the particular circumstances of the recipient, are likely to make it advisable to pursue a project approach in one case, a programme approach in another, and some combination in still others. Undoubtedly the most important consideration is whether the objectives of the donor can be best served by attempting to exercise influence on the macro- or the micro-level.

Although micro-influence can result from programme aid and macro-influence from project aid (properly "packaged"), such influence is usually more effectively exercised by project and programme aid, respectively. The primary question is the level on which donor influence can most usefully be focused. The choice of type of aid is generally a second-order issue that follows from the first.

[Excerpted from "Project Versus Programme Aid: From the Donor's Viewpoint," The Economic Journal, London: Volume LXXVII, Number 305 (March 1967), pp. 48-58.]

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## A Review

"AID THAT WORKS," The Economist (London), March 11, 1967, p. 908.

"Pakistan Plays it the Sensible Way" (Feb. 4, 1967, pp. 411-412);
"Guns Breed Butter" (Feb. 11, 1967, pp. 508-511);
"Black Country with White Skills" (March 4, 1967, p. 819).

In this, the twentieth anniversary of the Marshall Plan, it is encouraging to be reminded that aid can work in the 1960s as well as in the very different circumstances of the 1940s. A recent series of articles in The Economist offers Pakistan, Taiwan, South Korea, and Kenya as examples of countries that are developing successfully.

Gross national product (GNP) in both Taiwan and South Korea has grown nearly 8 percent a year for the past five years, with industrial output expanding at around 14 percent annually, and exports an astonishing 19 percent in Formosa and 40 percent in South Korea. Between 1960 and 1965, Pakistan achieved an annual growth rate of 5.2 percent, surpassing most of the targets of its second five-year plan and expanding its exports by 7 percent a year. Only recently independent, Kenya's gross domestic product rose by 6 percent in 1963, 7 percent in 1964, and, after a year of drought, by 8 percent in 1966.

Perhaps the most important element these four countries have in common is a reasonably stable government that is willing to give economic development truly high priority. This entails more than lip service, more even than planning. It involves political risks—for the inevitable "losers" in the course of development may represent powerful interests, and even the "winners," the great majority, may become disaffected because their gains are not great enough or fast enough. It also entails involving the planners in government decision-making; ivory towers are not conducive to realistic planning, it seems.

### Aid: the Crucial Input

But scarcely less important in these four cases has been foreign aid or, more specifically, large inputs of external capital. All four countries have received well above the world average of aid per

capita. Aid to Taiwan amounted to about $10 per capita for 15 years, until Taiwan was pronounced "self-sustaining" and the aid program terminated in 1965. Korea has been receiving aid at similar levels. While the equivalent figures for Pakistan and Korea are not so spectacularly high, they are nonetheless substantial. Aid to Pakistan from 1961 to 1965, for example, averaged about $3.80 per capita per year, compared to an average of $2.40 to India over the same period.

Because the foreign exchange component of development expenditures is usually high, these inputs of foreign capital are extremely productive. Neil H. Jacoby, in his analysis of U.S. Aid to Taiwan [New York: Praeger, 1966] estimates that "each dollar of aid... induced... one dollar or more of additional investment that would not otherwise have been made." [p. 153] He estimates that aid clipped 30 years off the time Taiwan would have taken to achieve its present living standards.

The composition of aid is also important. Much of the aid to Taiwan and Korea was in the form of United States "defense support" funds, which meant that it came as a grant. Loans repayable in dollars were not introduced in Taiwan until 1962. Before 1960, Pakistan, too, got low-cost "defense support." Consequently, these countries' repayment burden is relatively low, and foreign exchange that would otherwise go to paying off previous foreign loans can instead be used for further development.

But the key differential in the productivity of aid seems to have been the amount of it per capita. In assessing the differences between Economic Development in India and Pakistan [Cambridge: Harvard University Center for International Affairs, Occasional Paper No. 13, September 1966], Edward S. Mason concludes that "the difference in aid levels explains much," though he does add "but not everything."

## The Importance of Flexibility

One of the most impressive things about all these case histories is that these four governments—especially their planners—have been realistic (or opportunistic) enough to scotch their preconceptions when that seemed advantageous. Pakistani civil servants, like their counterparts elsewhere, favored the public sector and government-controlled allocation of resources. In the 1950s, they had their way—with unhappy results. The government of Ayub Khan, however, has exhibited a greater willingness "to get out of the way" of market forces. In agriculture, this has meant allowing the market to set prices (while protecting urban consumers against too sharp a price increase with buffer stocks of aid-supplied grain) and

reinforcing these incentives to farmers by heavily subsidizing irrigation, fertilizer, and other farm inputs. In Taiwan, at the urging of US aid advisers, officials who would have preferred a large public industrial sector came to emphasize providing the infrastructure and financial climate that would make private investment profitable—and have reaped the reward of substantial economic growth. In Kenya, where lack of administrative skills constitutes a serious brake on development, the government has been willing to use a much higher number of expatriate civil servants, teachers, etc. than its ideological preferences would call for. This kind of flexibility has enabled all four countries to make far better use of the aid they have received.

Some caveats are, of course, obvious. In none of the cases discussed here, except Taiwan, has the need for continued aid vanished. Furthermore, each country is, in some sense, unique, and policies that work in one may not in another. Nevertheless, as The Economist points out: "The record shows that in some countries, at least, aid has done what the simple-minded thought it would do. It has actually helped."

# USE OF WATER RESOURCES

## WATER FOR FOOD

B. R. Sen

[ While in the long run "new" water sources will be needed, better techniques of water conservation, irrigation, farming, and groundwater exploitation can substantially increase present water supplies for agriculture. A comprehensive national water policy, reinforced by pilot projects and demonstrations, is needed. ]

In our preoccupation with the food problem, we are sometimes apt to overlook the equally urgent problem of water. The role of water is supremely important, for, of all the natural resources, it is water which provides the essential medium for all the biological phenomena on which agriculture rests.

The Food and Agriculture Organization's studies confirm that the irrigated area of the world should increase from 350 million to 550 million acres before 1985 if food yields are to be raised sufficiently. Increasing irrigation to this magnitude involves very difficult problems, both qualitative and quantitative. The major technical problems can be grouped under three headings: water conservation, increasing water supplies, and more efficient use of available water.

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## Water Conservation

The highest priority should be given to the conservation of natural resources. Watershed management essentially means the use and treatment of the land in order to achieve the major management objectives without impairing and, if possible, by enhancing the water functions. Thus, land can be planted with, or denuded of, certain kinds of vegetation in order to change the rate at which water infiltrates into the soil, the rate of water evaporation, etc. For example, forests improve soil porosity, increase infiltration and reduce run-off, thus minimizing flood peaks and erosion. A well-managed water program can use many techniques to affect the yield and timing of stream flow.

The problem of pollution is also growing. Besides industrial and urban effluents, which are major sources of pollution in developed countries, several agricultural and forestry practices constitute potential hazards everywhere. Soil particles from erosion, chemicals and herbicides or pesticides, biological pollutants from humans or animals, etc. may cause deterioration in water quality and spread disease. Although some deterioration may be unavoidable, it can generally be kept within acceptable limits by judicious land- and water-use practices. Techniques are also available to combat most forms of pollution which have almost completely ruined fisheries in many rivers and lakes.

## Increasing Water Supplies

Conservation measures have their limits, however. The most economic and practical methods for increasing water supplies will continue to be the better control of river flows, through the construction of storage dams and other "classical" structures, together with the discovery, assessment, and rational exploitation of more groundwater. Technicians and policymakers do not always seem to realize the potentialities of joint exploitation, on a basin-wide scale, of surface and underground aquifers, including groundwater recharge and storage. In some cases, transfers between neighboring catchments or countries may also be possible.

In the long run, however, "new" fresh water will have to be found or produced. Research devoted to weather modification, evaporation control, and desalination is, therefore, of particular importance. The feasibility of significant weather modification has still to be demonstrated. The technical practicability and economic value of evaporation control over large bodies of water remains questionable. Technological progress has already brought water desalination within economic range for industrial and urban uses, but the cost of present processes is about $. 60 per 1, 000

gallons. Large-scale irrigation from desalinized water will not be economically feasible for normal agricultural operations till the price falls below $. 04 per 1, 000 gallons. Research must, therefore, be intensified on all these questions.

## More Efficient Use of Available Water

While most industrial processes use less than one hundred tons of water per ton of end product, irrigation requires several thousand tons of water for each ton of marketable dry matter produced. However, enormous savings are possible. It has been estimated, for instance, that a 20 percent improvement in irrigation efficiency could reduce the world's additional irrigation water requirements in 1985 from 600 million to 300 million acre/feet per year.

More efficient use of available water could produce immediate results. In the semi-arid zones, for example, more than half the rainfall is wasted owing to improper timing of land preparation and planting, mistaken plant density, useless transpiration by weeds, and wrongly chosen crop varieties. Suitable dryland farming equipment and methods exist, as has been demonstrated in the US and Australia where land, often terraced, is tilled on the contour by non-inversion tools, avoiding pulverization and protecting the soil against water and wind erosion. These practices permit optimum seed environment and "in-place" infiltration of rainwater.

In some semi-arid areas, large tracts of land now used for nomadic grazing could support ranching and production of cereals; but this presupposes the settlement of the population, which itself depends, among other factors, on safe and reliable village water supplies. Abundant and good quality water is also a prerequisite for the installation of most agro-allied industries. In this, groundwater development has a key role to play.

Notable production increases can also be obtained by reclaiming land suffering from an excess of humidity. Waterlogging and salinity, may, in the absence of drainage, defeat all efforts to bring more land under irrigation; large parts of Iraq, India, and Pakistan suffer from these afflictions. In more humid areas, swamp drainage and land fill can open up large tracts of land to cultivation. Finally, flood control in both tropical and temperate zones is needed.

Experiments have shown that irrigation is sometimes feasible by using brackish water that exceeds usually accepted mineralization limits. The breeding of salt-tolerant crop varieties offers good prospects. Brackish-water fish culture in impoundments is another way to use mineralized waters.

The utilization of marginal lands for forestry may be desirable for protection, recreation, or water supply. Even on arid sites, specially adapted species of trees can provide shelter for stock and guard against sand encroachment and wind erosion, though they may transpire more water than alternative forms of cover such as range and grasslands. On excessively wet sites, forests have been used to drain swamps and to stabilize erodible soils.

Although certain inland fishery resources are well exploited, not even a small fraction of the suitable water areas have yet been brought under fish culture. The most spectacular increase in production can be expected from fish and shellfish culture in impoundments. Average yields of 1,800 pounds per acre are easily obtainable in the tropics and even 5,000 pounds per acre have been obtained in some areas.

## Institutional Problems

In the development of water for food, the institutional aspects are no less important. Antiquated, inequitable water rights and restrictive land tenure practices have hindered irrigation development and frustrated the most productive uses of water and land.

A well-conceived water policy for a whole country must be backed by the appropriate government machinery and strengthened by suitable legislation. Piecemeal water control hampers efficient planning and development, while fragmentation of government machinery leads to waste and slow progress. Water legislation in most countries has grown haphazardly and often embodies provisions irrelevant to present conditions and modern technology.

The institutions required may include adequate administrative and financial provision for the running, maintenance, and further development of a scheme; for regulation of water distribution and use; for introducing new farming systems, providing effective credit and marketing facilities, and encouraging cooperation among beneficiaries. Often land settlement or resettlement projects are required. These institutions and services cannot be expected to grow spontaneously. Skillful planning and implementation are essential.

Administrators, managers, scientists, technologists, educators, leaders, and the ordinary users of water have each a most vital role to play. Their training and outlook are key factors in the success of water policies and programs.

## Economic Aspects

Irrigation schemes include all types of works, big and small. In some areas, small and medium schemes which can be executed with local labour, local equipment, and domestic currency are more practical than larger works requiring high technical engineering and scarce foreign exchange. Both, however, need to be explored simultaneously and not just one or the other. The tendency in some countries to neglect the small and medium works should be reviewed in this light.

Irrigation, however, is only one tool among several for increasing agricultural production; it has to be judged in the context of overall agricultural development programs and against a time horizon. In arid regions, "basic irrigation" is an essential measure, which has to be carried out before any other agricultural development can be contemplated. In more humid areas, "supplementary irrigation" may also play an important part, but may become economic only when other limiting factors have first been overcome. In all cases, the real cost of irrigation is likely to continue to rise, since, as favourable sites are exhausted, the succeeding projects are bound to become more costly.

In the case of multipurpose projects, water must satisfy the various competing and increasing demands for domestic uses, production of energy, industry, navigation, flood control, fisheries, and, above all, agriculture. It is essential, therefore, to make comprehensive plans for the use of water resources and to harmonize such plans with national development objectives; happily, this comprehensive approach has now been accepted in many developing countries.

At the same time, it is necessary to emphasize rapid implementation of pilot projects, so that applied research, demonstration, and training, along with the first step of actual investment, can be carried out without involving governments in excessive risks.

[Excerpted from remarks made to the International Conference on Water for Peace, Washington, D.C., May 23-31, 1967.]

## MORE CROP PER DROP

The total supply of water on this planet is essentially fixed. Thus man must find ways to increase crop production (and meet his other needs) by more efficient use of the world's limited water supply. Some ways to minimize water losses are shown below.

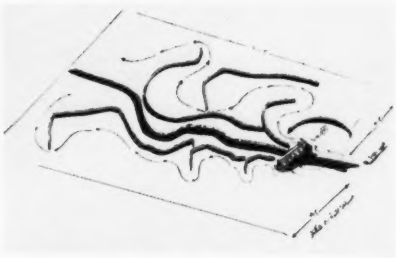
### Better Use of Land

Shallow-growing grasses provide forage values, minimize water losses and are highly effective in protecting soil from erosion.
[ Right: new grass fields in Jordan. Below: a contour-planted strip crop of lemon grass in Paraguay]

Proper land preparation is important. [Above: contour-planting holds rainwater in the furrows, USA]

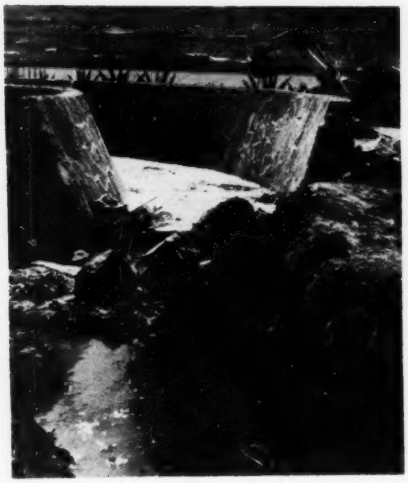
Certain cultivation practices reduce irrigation requirements. [Above: shielding young plants from hot sun, with paper cones, USA]

## Water Conservation



Groundwater supplies can be replenished by diverting water from natural streams and spreading it over adjacent soils long enough for it to sink into the ground. [Above: spreader systems for wadis in Libya]

Canal and ditch losses may range from 30 to 50 percent of the water diverted, due to seepage, operational wastes, and use by non-economic vegetation.
[Below: refurbishing a main canal in Mexico]



Seepage losses are usually controlled by concrete lining, although wholly satisfactory material for sealing cracks has not yet been developed. [Above: sealing a canal in Libya]

[Above: syphon tube takes water from irrigation channel to farm, Libya. Rt: a small canvas dam requires less labor than a mud dam and will not give way under pressure of water, India]

## Improving Irrigation

Equipment and materials are available for minimizing loss from surface methods of irrigation.

Sprinkler systems are best where soils are excessively permeable or too shallow for grading, or where rates of flow are small. [Above: Inter-American Development Bank-financed project, Venezuela]

[ Text: excerpted from Robert M. Hagan, "More Crop per Drop," a paper presented to the International Conference on Water for Peace, Washington, D. C., May 23-31, 1967, Document Number P/551.
Photos: courtesy of the Inter-American Development Bank, US Department of Agriculture, and US Agency for International Development. ]

# WHAT IS WRONG WITH INDIA'S IRRIGATION PROJECTS?

K. M. Bhatia

[Over-bureaucratization and under-utilization plague India's high-cost irrigation schemes. These failings can be remedied by giving technicians greater responsibility and by encouraging farmers, through tax devices, to use the irrigation water that is available.]

The Indian Planning Commission has estimated that the area which can be brought under major and medium irrigation schemes is almost 112 million acres, of which 24 million acres existed before 1952. In the three Plans just completed, an extra potential of 18 million acres has been created at a cost of Rs 1,280 crores [1 crore = 10,000,000; 1 rupee = $.21 pre-devaluation], which means that the capital cost of irrigation is a little over Rs 700 per acre.

For purposes of comparison, the Sukkur Barrage Project, completed in 1932, created a potential of 7 million acres at a per acre capital cost of about Rs 30. Even after allowing for inflation, differences of terrain, and the fact that "storage irrigation" such as that from dams and reservoirs costs more than irrigation from "diversion projects" like the Sukkur Barrage, the gap between today's Rs 700 per acre and the Sukkur Barrage's Rs 30 per acre is still very wide. The inflated cost per acre by Sukkur Barrage standards would be only Rs 80 today.

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This is not all. The utilisation of the potential created at the end of each of the three Plans is shown in the following table:

| At end of | Potential (million acres) | Utilisation (million acres) |
|---|---|---|
| 1st Plan | 6.5 | 3.1 |
| 2nd Plan | 11.7 | 8.3 |
| 3rd Plan | 18.0 | 13.0 |

There is always some time lag between construction and utilisation, of course, but considering our acute food problem and heavy investment is the lag not too much?

## Too Much Bureaucracy

Two factors which have contributed to raising costs are the bureaucratic control of projects and political interference. In the construction of the Sukkur Barrage, the chief engineer of the project was Number One, and under him were a senior civilian and an audit officer. Between them, the project was completed ahead of schedule. Today, each project has a control board, headed by a politician, and consisting usually of one or two engineers and three or four administrators. The chief engineer of the project has to spend much of his time educating and convincing the non-technical members. Consequently, he has limited time for his job.

Furthermore, questions such as land acquisition often involve the interests of government ministers and can easily result in uneconomic payments to constituents for rights, services, etc.

Bureaucratic delays in decision-making or land acquisition also result in contractors' making claims on account of idle labour and wasted efforts. This again raises the cost of the project.

All these factors are capable of correction, even in a democratic set-up.

## Under-utilisation

Reasons for under-utilisation of the irrigation potential are not difficult to find. Prices of agricultural produce are so high and the agriculturist is so lightly taxed compared to the industrialist that a kind of lethargy sets in. In 1932, the water rate on sugarcane, for example, was as high as Rs 45 per acre, compared to the rate of Rs 8 per acre charged in Orissa as recently as in 1955. The agriculturist, by his hard work, could still earn an income after paying the 1932 water rate.

The Sukkur Barrage was opened on the threshold of the depression. Despite the slump in prices, cotton cultivation, drawing on the project, had developed in less than 5 years to the extent envisaged for 10 years. When, with the advent of World War II, prices started to spurt, the Sind Government introduced a sliding scale of assessment linking the consolidated water and land rate with the market rate of product subject to a certain maximum and minimum. The result was that the project more than paid for itself. By 1945 the province had not only wiped out the Sukkur Barrage debt but had accumulated enough reserves to start the Lower Sind Barrage Project without any loan or help from the central government. Even in this exercise, the grain procured by the provincial government at Rs 7.50 a maund [ 1 maund = 82.28 lbs. ] was sold in the province at Rs 10 a maund when the price elsewhere in India was about Rs 15 a maund. This is a classic example of what a good administration of an irrigation project can achieve. None of our post-independence irrigation projects comes anywhere near it.

## What Can Be Done?

There are two major changes in today's practices which need very serious consideration. To begin with, after an irrigation potential is created, the choice of whether or not to draw the water is presently left to the cultivator. If he takes the water he has to pay a water rate, so to escape the payment the cultivator often does not take to irrigation. He continues to depend on the rain and sometimes even steals the overflow from neighbouring fields that use irrigation water. The cultivator is afraid, moreover, of the betterment levy which is imposed as a capital tax on the benefits provided.

A solution to this reluctance lies in legislating that, once an irrigation potential has been created, everyone in the area must use it. Any cultivated area within the irrigation command should be presumed to have been cultivated with canal water and should be assessed accordingly. It should not be left to the whim of the cultivator to use or fritter away the facility. The scarecrow of the betterment levy should be substituted by a sliding scale of assessment whereby the total government levy is correlated with what the crop is able to earn. There is no reason why this approach should not succeed. It might help the agriculturist to understand that he has to play his part in developing the society to which he belongs.

An irrigation project is complete only when the last link carrying water to the field—the water-course—is complete. Otherwise, you have canals flowing full to waste. A water-course, according to the Canal and Drainage Act, is the property of the cultivator and he may be unwilling (or unable due to want of cooperation from co-owners) to excavate it. In most states the Irrigation Acts have now been

amended to give the government powers to complete water-courses where they do not exist and to recover the cost thereof from the cultivators. In Bombay, this led to full utilisation of potential at the very start.

Another factor that led to the faster development of the Sukkur Barrage and similar projects was that agricultural research stations were established over the region and the directors of agriculture were all trained agriculturists. Today the directors of agriculture are non-technical administrators. Can they be expected to bring the same dynamism, knowledgeability, and objectivity to agricultural techniques?

To summarise: our irrigation projects are very costly. It is possible to save on their cost by eliminating bureaucratic methods and inculcating a technical approach in their execution. After creating the irrigating potential its utilisation should be made obligatory. The construction of water-courses should be simultaneous with the main project, and a tax reform in agriculture should be brought about to make the agriculturist realise his obligation to the country at large. Concerted effort on these fronts should help in the solution of our food problem.

[ Excerpted from Economic and Political Weekly, Bombay: Volume 1, No. 9 (October 15, 1966), pp. 371-373. ]

# WATER REGULATION AND LAND USE: A COLOMBIAN EXAMPLE

Joseph R. Thome

[ Political complications and conflicting interests can make it hard to establish a consistent, rational water-use policy that will promote agricultural development. Sometimes, the powers needed to remedy the situation are lacking, but sometimes officials are loath to use powers they already have. ]

The use of water regulation as a means of improving or modifying land use and tenure patterns has in recent years received great emphasis in Latin America. It is the purpose of this paper to examine the water-regulation powers, activities, and problems of one of Colombia's regional development corporations, on whom much of the responsibility for developing Colombia's water resources has devolved.

The Corporación Autónoma Regional de la Sabana de Bototá y de los Valles de Ubaté y Chiquinquirá (CAR) was established in 1961 to operate in the Valley of Sopó. Among its specific functions, CAR was delegated the task of administering the public waters within its area of jurisdiction, including ground or subterranean waters.

## The Setting

The Valley of Sopó is located about thirty miles north of the capital city of Bogotá. It extends westward along the River Teusacá from the site known as La Cabaña to the point where the Teusacá

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meets the Bogotá, the area's principal stream. The valley as a whole consists of 15,000 hectares, of which approximately 4,500 to 6,500 are suitable for intensive agriculture under irrigation. The main crops grown in the rich soils of the valley are barley, potatoes, and wheat; there are also many dairy operations, some of which are very efficiently operated. Produce from the area has an easily accessible and vast market in the city of Bogotá.

Average annual precipitation for the region is approximately 980 millimeters [25.4 mm = 1 inch]. This amount of rain cannot, however, ensure the two annual harvests which are common in Colombia, because it is very unevenly distributed over the year. Floods are not uncommon during the rainy months, while during the summers, particularly from December to March, the amount of water is generally insufficient to satisfy all of the irrigation, cattle, and domestic demands. Periods of drought are also common, the last one being from the years 1958-61, when the average annual precipitation was only 700 millimeters.

## Water Problems

Most of the people who practice irrigation tend to use it very inefficiently. Water wastage and economically unjustified irrigation systems are common. At the same time, many who would benefit from it use little, if any, irrigation. Water consumption as a whole is much less than would be required for intensive agriculture. What irrigation exists is carried out only by riparians; under present conditions, there are no surplus waters available for non-riparian users.

Since most or all of the water used is public, its use is subject to the obligations and norms contained in present laws, dating largely from 1940, as well as to the special rules or conditions CAR is entitled to impose. If it so desired, CAR could regulate the use of all the public streams in the valley, and in this way establish fixed volumes for each user, in accordance with the particular needs, crops planned, etc. In the absence of such regulation, riparians may still utilize public waters without any permit. This has encouraged the excessive and inefficient use of the limited water resources.

In Sopó, these problems are particularly evident during the dry seasons, when it is common for upstream riparians to use up most of the available water, seriously affecting the downstream users.

This behavior violates the legal norms which regulate riparian use of public waters. CAR generally tries to issue orders or resolutions prohibiting such behavior, ordering the destruction of

illegal works, and establishing a system of turns or quotas so that all users may satisfy their minimum needs. But these orders are often unheeded or not fully complied with.

Unfortunately, CAR personnel have never been assigned the police powers necessary to enable them to enforce the water laws or the resolutions it has adopted. Consequently, while CAR has jurisdiction to settle water conflicts, establish conditions, etc., it must rely on the local alcalde (mayor) or police chief to carry them out. In practice, this system is not very efficient. CAR has found itself obliged to exert pressure on local officials through the intercession of the governor of the department.

However, even if these local officials did wish to cooperate with CAR, they are under strong pressure from local vested interests—who almost without fail are also the largest landowners—upon whom their political future depends. It is not strange then that, when a conflict arises, local interests may prevail and the Corporation's orders may not be carried out with noticeable speed or efficiency.

Thus, the regulation of the use of public waters, which should basically be subject only to technical consideration, can become enmeshed in political games, making it difficult to establish a consistent and rational water policy.

## Conflict with Bogotá's Municipal Water Company

The city of Bogotá has experienced an extremely serious population explosion, caused mostly by an influx of immigrants from Colombia's rural sectors. As a result, the city finds it necessary to increase drastically its public services, such as water, sewage, and electricity, in order to prevent shortages and to ensure the provision of these basic necessities in the years to come.

Among the planned projects is the construction of a dam across the Teusacá River at the site known as El Tambor, located upstream from the Valley of Sopó and very close to the northern sector of Bogotá. The necessary petition for a water concession has been filed with CAR, whose authorization is required.

In this petition, the Water Company promised to allow a constant flow downstream of 144 liters per second. CAR, while agreeing that the dam is necessary and would provide important supplementary benefits, such as regulating the river flow, feels it cannot grant the concession unless the company allows the flow of a sufficient volume to satisfy the existing downstream uses and needs—particularly during the dry seasons. This would require the release of 264 liters per second during the dry seasons and only 24

during the wet season, for an annual average of 144 liters per second. The Water Company has filed objections, stating that this would require a much larger and costlier dam than planned, that municipal needs prevail over conflicting demands, and that the only solution for the lower valley is for CAR to construct a smaller dam downstream from El Tambor, where water could be stored during the winter.

This conflict between the present riparian users of the Teusacá, with their long established rights, and the Water Company, representing the new interests or rights of thousands of city dwellers justifiably demanding an adequate water supply, has not as yet been resolved. It will probably have to be settled in the courts.

## What Can Be Done?

The use of public waters in the Valley of Sopó for purposes of irrigation could be improved through the exercise of existing or obtainable legal powers.

Under present laws, all streams which pass though more than one property, lakes or lagoons whose shores belong to more than one owner, and waters which flow through canals derived from public water sources are public waters subject to government regulation. A riparian can derive from public water the amount necessary for reasonable use within his own property, but he cannot assign or sell these water rights. Non-riparians are even more restricted in their rights to make use of public water.

Although riparians receive preference or indemnification, the water regulating agency may regulate the use of an entire public water source, establishing, through new concessions, a set distribution scheme among all its users, so as to ensure the most efficient use of the water supply and prevent conflicts. Expropriation, after indemnification and judicial review, is possible for reasons of public utility or social interests. Mayors, municipal police officers, and other government officials specifically assigned such functions are empowered to levy fines up to 500 pesos [$25] for violation of any of the conditions imposed on the users of public waters.

It is extremely important that CAR officials be provided with the same police powers which have been granted to other water regulatory agencies but which have not yet been granted to it. Otherwise CAR's policies for settling the bitter conflicts during the dry periods will continue to be frustrated.

Completion of the El Tambor dam by Bogotá's municipal water company can also be taken advantage of by CAR, even in the absence of favorable settlement of the conflict between the two agencies. The El Tambor dam would prevent floods common during the rainy seasons and provide downstream users with, in any case, a larger volume of water than is now available during the dry seasons. Having a definite supply of water assured, CAR could usefully exercise its power to regulate all of the public water uses in the valley of Sopó. It should adopt an overall water plan for the valley under which a fixed volume or percentage would be allocated to each user in accordance to his needs, projected crops, etc. This plan or regulation would tend to assure an efficient and controlled use of the limited water resources in the valley.

However, full exploitation of the Valley of Sopó for intensive agriculture depends on the availability of water for supplemental irrigation during the dry seasons. This would not only assure higher production within presently irrigated lands, but would also allow the irrigation of non-riparian lands which now have no access to water.

CAR is planning a small dam downstream from the El Tambor at the site known as La Cabaña to provide this supplemental irrigation. Many advantages would derive from this project, the following being particularly obvious: 1) It would put an end to the conflict between CAR and the Water Company, since the latter's only obligation would then be to allow a constant 144 liters per second to flow downstream as it presently wants to do. Thus, the projected supply for the city of Bogotá would not be endangered. 2) It would enable CAR to store almost all of these 144 liters per second during the eight winter months for later use during the dry months. 3) It would allow CAR to adopt a controlled system of water allocation in accordance with a development program for the region.

Using water from the La Cabaña dam, canals could be built on the slopes surrounding the valley, from which smaller irrigation and drainage canals would make water accessible to non-riparian lands. This would permit most of the valley to be irrigated through gravity, thus avoiding expensive pumping, and also help to prevent flooding of small mountain streams during the rainy seasons.

The organization of an irrigation district to manage the water would seem to be advisable, particularly if construction of the canals is decided upon, for the following reasons:

1) It would allow the recovery of at least part of the construction costs through special assessments.

2) Maintenance costs could also be covered through charging rates for the use of water.

3) Other tax or assessment powers could be used advantageously, such as imposing high assessments on lands not willing to receive irrigation.

4) Even if CAR is not assigned police powers, it would have greater enforcement powers as, having control over the water values, it could refuse to service those who don't comply with its conditions.

5) It would enable the adoption and carrying out of valley-wide agricultural plans, since the district management would have to approve planned crops before allocating water. Extension services could also be more efficiently provided.

6) It would give the local users an opportunity to participate in the district management (initially only in an advisory capacity) through its representation on the board of directors.

7) It would encourage the Colombian Land Reform Institute (INCORA) to adopt an agrarian reform program for the area, if one seemed necessary; INCORA enjoys wider powers in such land-reclamation areas. INCORA participation would also be beneficial in that CAR could then be delegated certain powers which would enable it to apply faster eminent domain procedures, give it broader tax assessment powers, allow it to grant water easements, and otherwise widen its scale of activities.

[Excerpted from a paper presented to the First Pan American Soil Conservation Congress, April 1966, São Paulo, Brazil.]

# COMMON SENSE IN COMMUNITY WATER SUPPLY

D. A. Okun and F. E. McJunkin

[ Elaborate automatic equipment often makes little sense in countries where equally good results can be had through imaginative engineering and greater use of available labor. Foreign experts sometimes encourage uneconomic planning in this sector. ]

The designer and developer of community water supplies in developing countries, even more than his counterpart in developed countries, must seek the basic reasons behind "conventional" designs and be prepared to challenge sacrosanct standards. He must be imaginative and exercise the ingenuity demanded by limited resources. There is a need for design standards developed for developing countries and not derived from developed countries. All this may seem self-evident, yet violations of these precepts abound.

For example, in an important capital city, a new water treatment plant has recently gone into operation. This is a country where skilled labor is scarce and unskilled labor is plentiful and low in cost. Yet mechanization was carried to an extreme, with mechanical coagulation devices and mechanical sludge-removal equipment. Almost two years after operation, the sludge-removal equipment in one settling tank was not operating

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because a part was broken and had not been received from Europe, where the equipment was designed and manufactured. After eighteen months of operation, this settling tank was manually cleaned and was found to have accumulated less than two feet of sediment—certainly no indication that mechanical sludge-removal equipment had been necessary.

In another such city, a new water filtration plant has automatic filter controls and a complex chemical feed system. One of the reasons given for using such complicated equipment is that local operators cannot be depended on and that the equipment can decide better, for example, when a filter needs to be washed. This argument is not valid; the maintenance of such equipment is generally more difficult than the operation it is to perform.

Certainly, where manual labor is plentiful, where electronic specialists are few, where money for purchase of equipment abroad is limited, and where the greatest need is to serve as many people with water as possible, it does not make engineering sense to invest limited resources in labor-saving equipment. Perhaps more important than cost, reliability of the supply may actually be decreased. This is particularly true where adequate maintenance of equipment cannot be assured.

Lest the foregoing comments be interpreted as a brief for no equipment, we hasten to add that there is a place for equipment or instruments that can do things better than they can be done by men. For example, the use of float switches for starting and stopping of pumps is superior to manual control. Remote controls may be appropriate where distances are great. Equipment manufacturers have made a considerable contribution to water supply practice in the developed countries, and they also can in the developing countries.

In the majority of cases, the above examples do not reflect upon the competence or judgment of a country's own engineers. Many of the fundamental decisions were made by consultants or equipment manufacturers from other countries. In some instances, the local engineers were not consulted or their opinions were disregarded. In others, the lack of local engineers has permitted projects to be conceived through so-called "turn-key" contracts, where the contractor is primarily interested in selling equipment. From a functional point of view, such equipment may be quite efficient. In developed countries, it may also be efficient in an economic sense. But its use in situations where labor costs are low, unemployment is rampant, interest on capital high, and foreign exchange funds limited would seem to be, at best, questionable.

## Design Standards

Engineers need not discard a good solution just because it was perfected before their time. For example, the slow sand filter was highly developed before the end of the last century. Many are still in use in the northeastern United States; new units have recently been installed in Europe and England. This type of treatment cannot be ignored when considering feasible alternatives anywhere. The very factors which weigh against the use of slow sand filters in an industrialized economy—namely, high land costs, high capital constructions costs, and high labor costs—are not applicable in developing countries. Furthermore, slow sand filters are reliable and require a minimum of mechanical equipment and chemicals for sound operation.

Some recent developments are indicative of the type of thinking that will be required in solving sanitary engineering problems. The development of large, but simple alum-cake solution feeders in Santiago, Chile; the Fordilla Service hydrant used on portions of the distribution system in Asunción, Paraguay; the modification of the aqua privy as developed in East Africa for use in low-cost, high-density residential areas; and the mono-valve filter developed in Taiwan—all these are examples of what can be accomplished. Because works are simple they need not be unattractive. The concrete waterworks built for Manila in the 1930's continues to be far more attractive than more recent highly mechanized additions.

A new publication, Water Supply and Sanitation in Developing Countries, sponsored by the Community Water Supply Section of the US Agency for International Development and published at the University of North Carolina, has been established to report on such developments. Some examples of items published to date include:

1) The use of constant-flow valves in Zambia. These are inexpensive valves, installed in water service lines, which yield a constant rate of discharge regardless of pressure, thereby reducing waste and insuring even distribution of water between users at high and low elevations.

2) Water supply in Indonesia using bamboo pipe. Procedures for design and construction are outlined.

3) A proportional chemical feeder developed in Swaziland. This feeder uses a paddle-wheel for dosing control and requires no source of power other than the paddle-wheel.

## Use of Consultants

Lending agencies often require that a reputable and experienced consultant be employed on a project, and such experienced engineers may not be available locally. Consulting engineers from developed countries, many of whom are making a major contribution to the global water supply effort, have long experience in the preparation of feasibility reports and in the design of waterworks. The best and most economical use of such consultants is in conjunction with local engineers, who can collect data, make surveys, do drafting, supervise construction, etc. As local engineers gain experience in the specialty of water supply, the responsibility of outside consultants can gradually be reduced.

Just as with imported equipment, the use of imported engineers has certain disadvantages. In designing a water supply system, it is necessary that the load on the system be established. An outsider, particularly one from another culture, labors under a handicap in this regard. How many people will use the water? Should they get the water from a public fountain, a yard tap, or indoor plumbing? What is the per capita consumption? What is the population of the city? How is it changing from a rural- to a city-centered population? For all these data, the outside engineer must depend upon local information which the local engineer is better prepared to gather and evaluate. Over-design from a capacity viewpoint can be just as expensive as over-design from an equipment standpoint.

In many developing countries little data exist on groundwater. Therefore, outside consultants may be biased towards "safe" sources—that is, surface water—although groundwater may be more economical.

Another area in which outside consultants are at a disadvantage is in preparation of cost estimates. Outside consulting engineers are often very much in the dark as to the cost of local materials and labor. These estimates are particularly important in estimating local currency requirements. Oftentimes, consultants are instructed to keep that cost to a minimum. If by this is meant an economical design, that is satisfactory, but if it implies an arbitrary cut in the estimates, including elimination of contingencies and profits, it is a mistake that will be costly in the long run.

Furthermore, it is not always realized that, in addition to design engineers and system operating personnel, successful water supply systems require support and participation from numerous other professional groups. These include: health agencies, which monitor water quality, develop support, promote improvements, and educate the public; state or federal financing agencies, which regulate

governmental borrowing; bonding agencies, which keep an eye on rates, repayment of debt, credit, etc.; consultants, either available on retainer or special commission; equipment manufacturers and distributors, available for parts and product information; and central data collection services, such as hydrological surveys.

Water Supply and Sewerage

Provision of piped water to densely populated areas necessarily requires concomitant consideration of sewers. Unfortunately some water authorities hesitate to provide funds for sewers, feeling that they are unproductive investments. In urban towns in India, where water supply has long since been installed but a sewer system has been held up for want of adequate "subsidy," the delay is costing dearly. Insanitation and mosquito nuisance have taken root and filariasis is becoming endemic over an ever widening urban area in the entire country.

The visible return from sewerage is not so attractive as from a water supply or an electrical project. But the provision of sewerage will eliminate the need for maintaining an army of people engaged in the unpleasant task of night soil conservancy, transport, and disposal; maintaining cesspools; and maintaining crews to combat nuisances. Savings on anti-mosquito measures can be anticipated. Mortality and morbidity rates will decrease. The cost of not providing water and sewerage facilities is inevitably greater than the cost of providing them.

[ Excerpted from "Planning and Developing Water Supply Programs in Developing Countries," a paper presented to the International Conference on Water for Peace, Washington, D. C., May 23-31, 1967, Document No. P/508. ]

# LOW-COST RURAL WATER SYSTEMS IN GUATEMALA

Danilo Aris

[Guatemala is embarked on an ambitious program of bringing household water to rural villages—a neglected aspect of public water supply. It seems that even individual homes can be served relatively cheaply, with new cut-off devices that can be put into water faucets and, eventually, with the use of a newly developed plastic pipe.]

One of the primary aims of the Guatemalan Ministry of Public Health is to provide potable water to the rural communities of the country, where almost 66 percent of the population lives. This is the responsibility of the Sanitary Engineering Department.

In our large and medium-sized cities, water is provided under the best standards and the network of distribution is made as complete as possible. Water is distributed to individual homes on a permanent basis, with consumption controlled by means of meters. When needed, water purification plants are built to protect the health of the urban inhabitants.

## Rudimentary Rural Aqueducts

But where we have piped water to rural areas we have been less strict, providing only safe, potable water to one easily accessible point. About 400 such rudimentary systems have been built. They are designed to provide 60 liters [15.8 gallons] of water per person per day; the village people obtain

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the water at public faucets or taps and then carry it to their homes. The public taps are built to supply water to a maximum of 100 persons.

For the most part, because Guatemala is a mountainous country, it has been possible to find a natural water spring that permits a relatively simple gravity system, gathering the water in catchment boxes that fill the sanitary requirements and avoiding the need for pumps or water-purification plants. Occasionally, water is supplied by means of drilled wells.

On no rural supply project may the initial investment amount to more than 15 Quetzales [ equivalent to $15] per person. In practice, the cost seldom amounts to over Q12 per person.

These rudimentary systems of public taps are well received in the countryside, where residents formerly had to transport impure water from a distant river or spring. With a minimum of organization, we can count on the rural communities generally to provide local materials and labor in building the aqueducts. In some cases, this helps us save up to 30 percent of the cost of construction.

While we have heard many times that water that doesn't go directly inside the houses is not satisfactory, we have always had important reasons to continue the construction of these rudimentary rural aqueducts: First of all, any system that provides complete distribution with a more ambitious design naturally costs more and is harder to operate and maintain.

Safe Public Water Tap in Peru

Most of our rural towns are very scattered. In many, springs would not supply enough water for a complete distribution system, and it would be necessary to provide water purification plants. Finally, it is most unlikely that a pumping station, a water purification plant, a metered network of distribution, or other parts of a modern water system could be adequately operated and administered by a rural community with few resources.

## A Faucet in Every House

Nevertheless, we have felt that the work we have done in the past has been incomplete, and we have been trying to develop rural aqueducts that would fulfill all the technical requirements and yet have low installation costs. We have made considerable progress in several directions.

Planning. First, and most important, we have emphasized complete programming and planning, thus uniting all the necessary factors. There is no need to go into detail on this aspect, since its value is well known.

Selection. Second, we have tried to identify those rural communities where investment will bring the highest returns. Adequate selection can help relieve the problem of too-rapid urbanization. A wisely designed water system should strengthen the medium-sized towns which are often the only choice between the small village without a future and the slums around the large cities.

The most critical communities from our point of view are those 1) located in important zones with economic potential, 2) located close to large public works projects, especially new highways, and 3) towns where a more complete aqueduct is an urgent necessity. For isolated villages, the rudimentary emergency systems may be enough.

New Techniques. Perhaps our greatest cause for optimism is that we believe we have found a simple inexpensive method for operating rural systems that provide water to all buildings. Water meters are not practical in rural areas, for obvious reasons. We have experimented with other methods of water control, such as calibrated orifices, but they have never given us the desired result. In 1965, we started using a new type of faucet that regulates the flow of water and has an automatic shutoff. These new faucets have had excellent results.

With a small additional investment, it is possible to modernize many of the existing rudimentary water systems by using the new faucets. Twenty private connections can be substituted for each

public tap for a total of Q280, or Q14 per connection, including the new type faucet, the necessary pipe, fittings, and all additional expenses. If we subtract Q25 (for the public faucet that is no longer used) from the total, then the additional cost for 20 houses, or 100 persons, is Q255, or Q2.55 per person. The cost of the rudimentary systems is Q12 per person, as already noted. Thus, we get a modern system for a total cost of only Q14.55 per person, which is still under our Q15 limit.

These modernized systems do not require any change in our present standards. As noted, we design the rudimentary systems on the basis of 60 liters per person per day. Our Department has found that, in towns where all the houses have the new faucets, consumption is never over 50 liters per person per day. Thus, the present designs may be used without modification. More ample experience will probably permit us to reduce our standards—the size of the pipe, the volume of the storage tanks, the necessary flow from the water source, etc.—and thus reduce the cost.

Financing. For 1967, the total allocated for the rural water supply program is Q2,100,000, including a loan from the Inter-American Development Bank of Q1,300,000 plus the national resources. It has proved feasible to obtain enough reimbursement from the beneficiaries to cover the minimum expenses for operation and maintenance and to contribute to the financing of the program.

## Toward the Future

The momentum that this program has achieved so far has permitted us to think of further improvements for the future.

We have been experimenting with the use of plastic PVC pipe, which advantageously substitutes for the imported galvanized-steel pipe we have used in the past. The use of PVC pipe saves as much as 40 percent of the cost, thus enabling us to cover more villages with the same budget. The PVC pipe has the further advantage that, though not made in Guatemala, it is manufactured in other countries of the Central American Common Market.

Finally, we have begun to think about the possibility of prefabricated storage tanks and other technical resources, as well as of contracting some of our work out to private companies.

[Excerpted from "Low Cost Distribution Systems in Guatemala," a paper presented to the International Conference on Water for Peace, Washington, D.C., May 23-31, 1967, Document No. P/648.]

## FINANCING PUBLIC UTILITIES

World Bank Staff

[Revenue-producing public utilities projects will almost invariably fail to meet the needs of economic development unless they are made to pay their own way. Rates should cover all operating and maintenance costs, including repayment of loans, and produce some surplus.]

Hydroelectric power, railways, ports, waterways, telecommunications, and urban water supply are all projects which can clearly be classified as revenue-producing public utilities. The financial policies of such enterprises have an important impact on the whole process of development. The most crucial question concerns their rate structures: do their revenues cover costs and provide enough surplus to finance improvements and future extensions to meet growing demand?

In fact, rates charged by long-established utilities in some less developed countries bear no close relation to real costs, but are held low for socio-political reasons. The utilities are subsidized. While the subsidies may be too small and uncertain to assure satisfactory service, they place a heavy burden on the government's scarce revenues and often lead to inflationary borrowing. In some cases, utility revenues themselves are diverted to other purposes to relieve pressure on the budget. Service inevitably deteriorates, falling progressively further behind demand. Public indignation

The World Bank family includes the International Bank for Reconstruction and Development, the International Development Association, and the International Finance Corporation.

over poor service and resistance to higher rates grow simultaneously, feeding upon each other, while development is inhibited by the shortage of services that are basic to the health, mobility, and productivity of people.

Revenue-producing public utility projects almost invariably will fail to meet the needs of economic development unless they are made to pay their own way. The experience of the World Bank and others clearly indicates that rates must be established which will cover all operating and maintenance costs, including debt requirements, and produce a surplus which will help finance future extensions. These conditions apply whether the utility is publicly or privately owned.

An excellent example of the efficacy of such policies is a small project in Managua, Nicaragua, where the water supply system has been reorganized, modernized, and extended with the aid of a $3 million IDA credit. When the credit was approved in late 1962, only about 40 percent of the city's built-up area and 53 percent of its population of 221,000 were served by the Empresa Aquadora de Managua, the water utility. Door-to-door vendors supplied most of the remaining population, chiefly in the low-income groups, while some had access to private wells and a few were served by small, independent systems. Water from these sources was often contaminated, and the limited statistics available indicated a high incidence of typical water-borne diseases.

There had been no change in the Empresa's rates since 1945, while water purchased from private vendors cost from $2\frac{1}{2}$ to nearly 14 times as much, and other items in the cost of living had nearly doubled.

In borrowing from IDA, the Nicaraguan Government agreed to adopt policies permitting the Empresa to establish and maintain a schedule of rates covering operation and maintenance, depreciation, interest and amortization payments, normal year-to-year extensions of service, and a reasonable proportion of major expansion programs as they became necessary. Arrangements were made for a management study, assisted by the Pan American Health Organization. The Empresa moved immediately to adopt recommendations growing out of this study, including the modernization of its accounting system.

Free service was eliminated, average rates were increased by more than 50 percent, and a program was initiated to meter all water connections. As in all such cases, these decisions required political courage, but they have been amply vindicated by results. Even before the project was completed last year, extending services

to 65 percent of a population which had grown by a third, the Empresa was earning 8 percent on net fixed assets, including new facilities constructed with the IDA credit but not yet in service.

The Empresa is now in a position to continue its growth on a sound basis, providing safe water at reasonable rates to an ever increasing proportion of Managua's rapidly growing population. It has also proved that its customers will pay a fair price for good water if they can get it; at least, its most recent report indicated that it had accomplished the remarkable feat of collecting 99 percent of its bills within two months of billing date!

Unfortunately, the Managua case is not typical. Resistance to realistic utility rates is prevalent. It is often difficult to gain acceptance of the concept even for railway and electric power service, and it is even more difficult when the product is safe drinking water, the most basic commodity of all. The idea that water for drinking and hygiene should be free, or heavily subsidized, tends to inhibit financing for water supply and is a major cause of the already critical shortage in less developed countries. On the other hand, there is ample reason to believe that realistic rate structures will go far toward attracting the necessary funds from domestic and foreign sources and that urban consumers will pay reasonable rates for a reliable supply of good water if service is available.

Unfortunately, too, there is little evidence to support the same conclusion about rural users of water, whether for irrigation or for drinking and hygiene. The question is becoming important, however, especially in areas newly irrigated with slightly brackish or otherwise contaminated water and where the irrigation canals are the only source of village supply. In some parts of India, for example, the problem is rather acute, and sooner or later fresh water may have to be piped and pumped over long distances at considerable expense if farmers are to be held on the irrigated land.

[Excerpted from "Water and Economic Development," a paper presented to the International Conference on Water for Peace, Washington, D. C., May 23-31, 1967, Document No. P/715.]

# FISCAL POLICY

## SAVING THROUGH TAXATION— REALITY OR MIRAGE?

Stanley Please

[Non-developmental current expenditures have often eaten up the revenues added by increased tax collection. Greater reliance on private savings and, though tax specialists denigrate them, devices like earmarking of revenues, might help to discipline government expenditure.]

In today's world, it is mainly through their own efforts to raise their rates of saving that developing countries can add to their stock of capital. For a variety of reasons, most economists have argued that domestic savings for national development can be increased only by governments compulsorily reducing (mainly by taxes) the personal consumption of the citizens. These economists point to the difficulties of raising the level of voluntary savings—the low incomes of large proportions of the population, the fear that price increases will undermine the real value of savings, political misgivings, etc. Furthermore, some argue that government policy would be inhibited by reliance on increased voluntary savings; this is because private savers would hold claims (in the form of bonds and other savings media) on future increases in output, and governments would have to service this internal debt.

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Most economists, thus, have advocated raising the level of domestic savings through budgetary policy—i.e., reducing personal consumption by increasing taxation while ensuring that this increased revenue is not used to increase government consumption on defense, civil services, etc. Indeed, the ratio of tax revenue to gross national product (GNP) is treated as one of the most important criteria for judging a country's economic performance.

## A Look at the Record

Over the past decade and a half there has been an immense national and international effort to raise the levels of taxation in the developing countries. This effort has not lacked results. Many governments have shown a high degree of political self-discipline in introducing new tax measures and in increasing revenue yields. Tax revenue in India (Union and states combined), for instance, now represents about 12 percent of GNP, compared with about 7 percent in 1951. Likewise, in Ceylon, tax revenue now represents 23 percent of GNP compared with 20 percent only five years ago. In Peru, current public revenues now account for 20 percent of GNP, compared with 15.5 percent in 1960, and in Brazil, the percentage has risen from 20 in 1956 to 27.5 in 1964.

To the extent, however, that the motive of these countries was to channel more of their domestic resources into economic development, the record is depressing. In India, the Union Government has increased its income by Rs 9,000 million since 1960-61, yet less than 5 percent of this increase has taken the form of investible resources. In Ceylon, despite the tax effort, government savings in 1963-64 were insufficient to cover the losses of government enterprises, thus resulting in net dissaving by the government sector as a whole. In Peru, there has been an 18 percent decline in public saving—during a period in which GNP went up by 60 percent; thus, public saving fell from 4 percent to 2 percent of GNP.

Yet most economists argue for still more taxes.

This advice is relevant to the development problem only if the government can prevent its expenditure from rising as fast as its income. Because this assumption is so crucial to the whole strategy of development, which relies heavily on compulsory savings through taxation, its realism needs to be examined.

## Must Public Expenditure Rise?

Public expenditure is governed by politics, and its general size and shape is not the business of the economists—that is the conventional view accepted by most economists. Many seem to accept the

argument that the rise in public expenditure must be almost unconditionally accepted. It is one of the tragedies of the emotion-packed environment in which economists discuss their problems that one has misgivings at suggesting, or even hinting, that this might not be altogether true—that possibly some part, and in some countries a large part, of public expenditure might have lower priority than other calls on a country's resources.

Of course, a great deal of public expenditure must be accorded high priority, and some built-in rate of growth of public expenditure must be accepted as part of the development process. One obvious example is the increased expenditure on teachers' salaries resulting from a growing number of schools. However, while these built-in factors may be "inevitable," there is a dangerous tendency to extrapolate these arguments into a justification for all increases in government current expenditure.

Some increases in expenditure are altogether unrelated to development. They are, rather, the outcome of autonomous policy decisions by national governments. Expenditure on defense is the most obvious, but many others are familiar—even notorious. They include expenditure on consumer subsidies, the deficits of publicly operated industries, unduly high salaries for public officials, as well as the more obvious forms of wasteful prestige expenditure.

Is it possible to resist political pressure or popular clamor for increased defense expenditure, salary increases for public officials, etc., when it is known that the money is in the kitty? The record suggests that those who argue for a development strategy based on increased compulsory savings have underestimated and, more frequently, ignored the effect that an increase in taxation might have on public consumption. There is a danger that those who recommend higher taxes in the interest of economic growth may be looking at a mirage.

## Keeping Public Expenditure Down

What, in this context, does governmental discipline of expenditures actually mean?

As regards expenditure on education, health, housing, and so on, there is, first, the notorious statistical problem that, although most expenditure under these heads is classified as current expenditure in government budgets, some should rank as capital expenditure. This would embrace those funds that in fact increase the ability of the economy to produce more goods and services in the future, though the acceptance of the principle must not give carte blanche to the acceptance of all social service expenditure as investment

expenditure. Everyone believes in the desirability of an educated rather than an ignorant population, healthy rather than sick people, and so on. Yet, in the light of the aims of economic growth, expenditure on such desirable objectives may be too high or rising too fast.

Ultimately, the only certain answer to the problem of controlling expenditure is that governments should be both more rational and more self-disciplined in determining public expenditure policy.

Better budgetary processes. Greater rationality requires the development of budgetary processes which clearly set forth the choices open to the government and the implications of each choice in terms of alternatives forgone. This in turn requires adequate accounting practices, expenditure controls, including forecasting analysis, financial reporting techniques, etc. The importance attaching to these developments cannot be exaggerated.

Rationality of choice can, however, only be judged in relation to the pattern of ends which a government wishes to satisfy. This pattern comprises many elements, of which a higher rate of economic growth is only one. Other elements are often more appealing, particularly if they offer benefits which are more immediately apparent than those from policies designed to achieve longer-run economic growth. This is especially true where a government is dependent on popular support for its policies at periodic elections. In such circumstances, the development of procedures by which budgetary policy can be determined more rationally is likely to be an inadequate response to the problem raised by this article.

Administrative devices. In addition, it is desirable that governments should, if possible, be made subject to institutional pressures which would result in more emphasis being given to the longer-term interests of the society.

One device which appears to meet this need is the assigning of public funds for the financing of development expenditure in general, or the earmarking of particular revenues for particular developmental uses. Economists have widely argued that the earmarking of public revenues is an undesirable procedure; governments should be free to determine the use to which all revenues are put. Nevertheless, if the amount of non-priority expenditure is a function of the availability of funds, as suggested above, then preventing the use of significant sources of revenue for such purposes must impose greater restraint upon a government.

At the most general level, such earmarking can take the form of assigning certain revenues to a development fund—as happens

already, for instance, with a proportion of oil revenues in some of the oil-producing countries. Alternatively, the earmarking can be more specific. For instance, some or all public enterprises can be authorized to retain any surpluses they generate, in order to increase their productive capacity, rather than have them siphoned off into general budgetary revenue. Likewise, the revenue from user charges (highway tolls, for example) can be assigned specifically to further development in the relevant sector. Again, revenue from a particular tax can be assigned to an unrelated sector of development expenditure. For instance, the revenue from liquor duties might be assigned to the financing of technical education.

The danger of a misallocation of financial resources arising out of earmarking must be readily acknowledged. This danger can be reduced if revenues are assigned to a general development fund or to wide sectors such as communications and power. It can also be reduced to the extent that anticipated increases in expenditure required under given heads can be matched against the expected growth of revenue from particular taxes or other sources. Certainly nothing said here is intended to favor the proliferation of detailed earmarking which has taken place in some countries and which is unrelated to the development needs of the country.

## Private Savings

Apart from administrative devices like earmarking, the time has, perhaps, arrived to question, for certain countries, the strategy of domestic financial mobilization which is based almost exclusively on increased taxes. Even if the strength of the factors which weigh against private saving is fully admitted, it does not follow that the only solution is to rely upon publicly generated saving. A more effective solution—or at least a solution which could be given far more emphasis than it is generally accorded—is to provide the necessary encouragements to savers in securities, insurance policies, savings deposits, and other financial assets.

The simplest and most obvious change in the terms savers receive would be a straightforward increase in the structure of interest rates. This, however, is an unselective measure. It might be better for governments to try to counteract specific disincentives to savings with specific measures. For example, it is possible to give savers guarantees against rising prices by the issue of bonds or other savings media, the value of which, and/or the return on which, is linked to some measure of the change in the internal value of money. Instructive experience with the use of value-linking devices by governments is already available—notably in Israel, Finland, and France.

Except in emergencies, governments tend to follow a set pattern of budgetary policies, reacting conventionally to prospective surpluses and deficits. This being so, a change in the balance between revenue receipts and capital receipts could significantly affect governmental attitudes. Increasing the government's deficit "on current account" could generate more resistance administratively and politically to increases in public current expenditure.

Twentieth-century economic thinking seems to be dominated by the idea that governments would be more rational and far-sighted than the individual, with his natural preference for present consumption. The evidence is, however, that the pressures on governments to spend have been irresistible, even if often quite understandable. These pressures are made less resistible when it is apparent to everyone that the funds are immediately available to the government in the exchequer.

I have tried to indicate some devices which might alleviate this problem. These cannot be foolproof, for the obvious reason that governments, in the end, are sovereign within their borders. However, even sovereign states can be assisted in keeping to the path of virtue if temptations to take easier and politically more popular decisions are removed.

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# THE EVOLUTION OF PUBLIC FINANCES

Richard S. Thorn

[ The less a government is able to control the rate of growth of its social expenditures, the greater must be the built-in elasticity of its tax structure. This will mean greater emphasis on direct taxes on income, capital, and exports, as well as more frequent revision of tax rates. ]

The higher the per capita income of a country, the higher the proportion of its current government expenditures to gross national product (GNP) is likely to be. Social forces closely related to the process of development seem to be a major determinant of this tendency of public expenditures to rise faster than national product. This rise in public expenditures, in turn, has certain implications for the structure of government revenues. These hypotheses emerge from study of fiscal data for countries at widely varied stages of development [ see Table 1 ].

## The Increase in Expenditures

In countries with per capita incomes of below $200, central government current expenditures averaged approximately 13 percent of GNP; for $200-500 per capita incomes, almost 15 percent; over $500 per capita, the percentage jumped to 24, and to 24.3 percent for over $1,200 per capita. Two categories of states varied somewhat from this norm: 1) where state and local governments

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TABLE 1
General Government Revenues and Expenditures as Percent of GNP, Countries Grouped by Per Capita Product 1950-59 (Based on Current Price Totals)

| | Per Capita Product | | | | Differences between highest and lowest income groups |
|---|---|---|---|---|---|
| | I Above $1200 | II 501–1200 | III 200–500 | IV Under 200 | |
| Number of countries[1] | 7 | 8 | 10 | 11 | |
| REVENUE | | | | | |
| 1. Indirect taxes | 10·5% | 13·1% | 9·1% | 8·5% | 2·0 |
| 2. Direct taxes on corporations | 4·1 | (7)2·6 | (7)2·2 | 2·2 | 1·9 |
| 3. Direct taxes on households | 10·9 | (7)10·8 | (7)3·8 | 2·0 | 8·9 |
| 4. Income from property and entrepreneurs | (6)1·8 | 1·5 | 1·1 | 1·6 | 0·2 |
| 5. Current Revenue (Sum of 1–4) | 27·3 | 28·0 | 16·2 | 14·3 | 13·0 |
| 6. Current Revenue Calculated Directly | 27·3 | 29·1 | 17·8 | 15·9 | 11·4 |
| EXPENDITURE | | | | | |
| 7. Consumption expenditure | 14·1 | 12·7 | 10·6 | 10·9 | 3·2 |
| (a) Civil | 8·6 | (5)10·1 | (2)7·5 | (4)6·2 | (2·4) |
| (b) Defense | 5·5 | (5)2·8 | (2)4·8 | (4)2·8 | (2·7) |
| 8. Subsidies | 1·0 | 2·0 | 0·6 | 0·2 | 0·8 |
| 9. Interest on Public Debt | 2·3 | 1·3 | (8)0·8 | (10)0·5 | 1·8 |
| 10. Current transfers to households | 6·7[2] | 7·9 | 2·8 | 1·0 | 5·7 |
| 11. Current Expenditure (Sum 7–10) | 24·1 | 23·9 | 14·8 | 12·6 | 11·5 |
| 12. Current Expenditure Calculated Directly | 24·3 | 24·0 | 14·8 | 12·7 | 11·6 |
| 13. Saving Calculated Directly | 3·0 | 5·0 | 3·0 | 3·2 | −0·2 |

[1]Where data was not available for all countries, the number of countries having data is shown in brackets. As a consequence, total may not equal parts.

[2]7·8 excluding the United States.

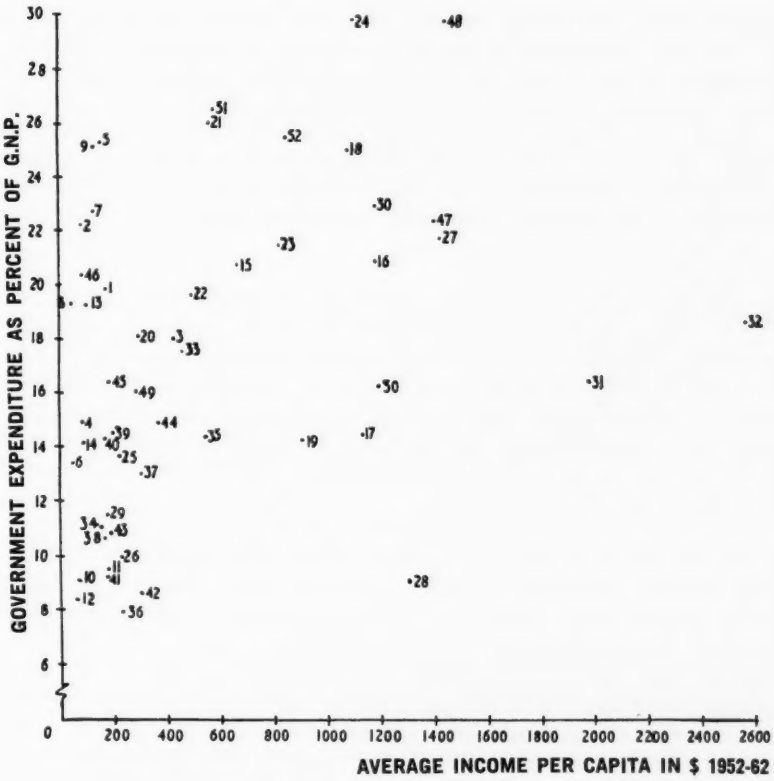
Source: Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations," Part VII. Economic Development and Cultural Change (Chicago), Volume 10, Part 2 (January 1962), p. 8.

play a substantial role (as in Australia, India, Switzerland, and United States), central government expenditure ratios were lower; and 2) former British dependencies (except India and Pakistan, where exception 1 applied) appeared to have significantly higher expenditure ratios than other countries at similar economic levels, apparently because they have, at least temporarily, retained British Colonial norms of expenditure and taxation. Chart I shows the relation between central government expenditures as a percent of GNP and per capita national product for 52 countries in 1952-62.

These differences in relative levels of government expenditures cannot be explained by differences in the percentage of government investment, which was about 3 percent of GNP for all income groups (except for a brief period of postwar reconstruction in some European countries). The most important difference, rather, was in transfers to households—i.e., in the level of social expenditures on

## CHART I

The Relation Between Central Government Expenditures as a Percent of GNP and Per Capita National Product for Fifty-two Countries, 1952-62




| | | | |
|---|---|---|---|
| 1 GHANA | 14 THAILAND | 27 SWEDEN | 40 GUATEMALA |
| 2 KENYA | 15 AUSTRIA | 28 SWITZERLAND | 41 HONDURAS |
| 3 S. AFRICA | 16 BELG-LUX. | 29 TURKEY | 42 MEXICO |
| 4 SUDAN | 17 DENMARK | 30 U.K. | 43 NICARAGUA |
| 5 RHODESIA | 18 FRANCE | 31 CANADA | 44 PANAMA |
| 6 TNG. | 19 GERMANY | 32 U.S. | 45 PERU |
| 7 U.A.R. | 20 GREECE | 33 ARGENTINA | 46 VENEZUELA |
| 8 BURMA | 21 IRELAND | 34 BRAZIL | 47 AUSTRALIA |
| 9 CEYLON | 22 ITALY | 35 CHILE | 48 N. ZEALAND |
| 10 INDIA | 23 NETHERLANDS | 36 COLOMBIA | 49 JAPAN |
| 11 PHLPNES | 24 NORWAY | 37 C. RICA | 50 ICELAND |
| 12 PAKISTAN | 25 PORTUGAL | 38 EQUADOR | 51 ISRAEL |
| 13 KOREA | 26 SPAIN | 39 EL SALV. | 52 FINLAND |

Source: Richard S. Thorn, "Per Capita Income as a Measure of Economic Development" (December 1965), mimeo, Appendix Table I.

education, health, and social welfare. If one eliminates defense spending and interest on the public debt (which, in developed countries, is largely the result of deficit financing of past wars), these payments accounted for approximately three-quarters of the increase in the ratio of current expenditures to GNP, as between the lowest and highest income groups.

The main reasons for growing rates of social expenditures are obvious. As development proceeds, there is usually a steady social transformation. The relative size of the urban population increases, as does the political importance of the urban industrial worker. This is often accompanied by the development of more democratic institutions and a diminution of the power of oligarchies whose strength is derived from ownership of the land. Even under a dictatorship, the urban population usually receives a voice, if not a vote.

In almost all nations, urban populations benefit from a larger sum of social expenditures per capita than the rural population. When urban populations can influence the composition of the government, the tendency to increase social benefits for urban groups accelerates. Therefore, the rising proportion of urban to total population, all other things being equal, alone is sufficient to raise the relative level of public expenditures. The historical trend can be seen clearly in Chart II.

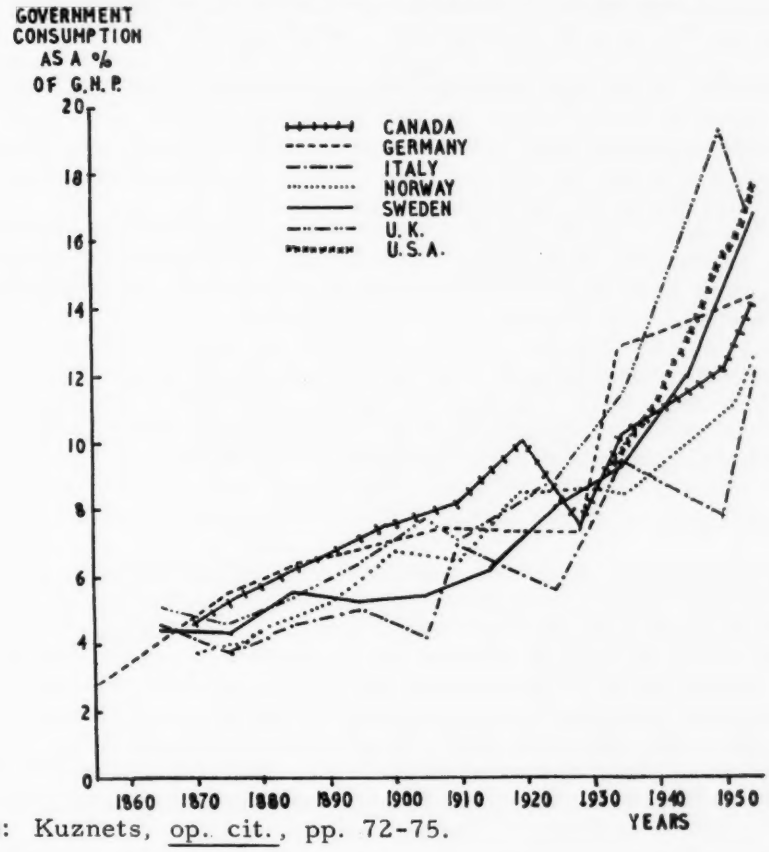
Other types of transfer payments, too, are forms of social expenditure, albeit indirect. The losses of many state enterprises (especially power and transport organizations), for example, frequently arise from two factors: 1) setting the price of output below cost or below the price that would prevail in a competitive market; and 2) employment of excess workers. The first factor provides an indirect subsidy to consumption which, in most cases, further aggravates the maldistribution of social benefits between the urban and rural populations. The second is a form of unemployment assistance, largely to non-agricultural workers.

Two types of non-social expenditures—non-agricultural subsidies and interest payments—may tend to rise more than national product, but data are lacking and variations among countries is greater. They are not treated here.

Administrative and economic expenditures as a percentage of national product do not seem to rise as fast as social expenditures. There are opposing tendencies at work here. On the one hand, the increasing complexity of a developing society necessitates more extensive mechanisms of regulation, control, and coordination. On the other, the productivity of government workers may improve

CHART II

Long Term Movements in Government Consumption Expenditures as a Share of National Product




Source: Kuznets, op. cit., pp. 72-75.

during the course of development in a manner to offset this rise in bureaucratic activity.

The ratio of defense expenditures to GNP also seems to be positively correlated with per capita national product. But over-all government expenditures do not seem to rise as fast as defense expenditures, because a rise in the latter is usually accompanied by a reduction in civil expenditures relative to GNP.

## The Increase in Revenues

The long-run tendency for the rate of growth of public revenues to equal the rate of growth of public expenditures is perhaps too obvious to require proof. Foreign capital transfers and deficit financing can rarely sustain, except for a brief period, a situation where expenditures are rising at a significantly faster rate than revenues. The power of compound interest effectively prevents this.

How, then, have developed countries financed their relatively higher levels of public expenditure? One does not have to look far. Almost four-fifths of the increase in the fiscal burden from the lowest income countries to the highest was accounted for by increases in direct taxes on households and corporations (largely income taxes), and less than one-fifth was the result of higher indirect taxes.

In general, the income elasticity of a country's tax structure should be compatible with the income elasticities of its expenditure. A brief survey is made below of the contribution that the major forms of taxation might make to such a structure.

### Direct taxes:

Whether the necessary growth in revenues is obtained by structural changes in the tax system or ad hoc rate adjustments, the proportion of tax revenue derived from direct taxes—taxes on income and wealth, payroll taxes, and export taxes—tends to grow. (In this study, as in United Nations usage, export taxes are considered to be direct taxes; in Africa and Asia, where they are particularly important, they are widely regarded as constituting levies on the incomes of the producers of export products.) Only direct taxes have a broad enough base and are income elastic enough to allow the revenue system to finance the tendency of expenditures to grow faster than GNP. Another consideration is the desire in many countries to achieve a more equitable distribution of income, although the tax system is often overrated as an instrument for doing this.

Income taxes. Personal income taxes tend to be highly income elastic almost by definition. Even if the rates are proportional, the growth in the tax base resulting from the growing monetization of the economy and the growing number of persons rising above minimum exemption limits guarantees an income elasticity greater than unity.

The contribution of corporate income taxes does not seem to be highly correlated with a country's per capita income, however. Even though the incorporated share of industry increases with

income, this may not necessarily lead to a rising corporate profit share; in fact, evidence seems to support an increasing labor share and a falling profit share in the course of economic development. Some countries do show an increase in the share of corporate taxes in the total government revenues, but this is probably the result of ad hoc adjustments—i.e., rate increases.

Capital taxes. Capital taxes are a varied category including annual taxes on capital assets, death or gift taxes, one-time capital levies, and taxes on capital gains. Their relative importance seems to be declining.

If capital taxation is to be a major source of revenue in less developed countries, the major burden must fall on land, since the ratio of reproducible capital to land is likely to be smaller than in developed countries. However, assessment and collection of land taxes in less developed countries presents many practical difficulties. A large proportion of the land may be in the hands of subsistence farmers with little cash income. Furthermore, frequent reassessment of land is difficult, and failure to reassess may result in inelastic revenues. Taxes on urban land are likely to be elastic, but the tax base is likely to be limited and this area of taxation is usually reserved for local governments.

Expenditure taxes. An expenditure tax would tax income in some inverse proportion to the proportion of income saved. Insofar as this type of taxation was successful in increasing the average propensity to save, it would tend to reduce the share of government revenues in national product. But if the increased private saving brought about by an expenditure tax is not utilized by private investors to provide some of the services that the government might otherwise have to provide, the government may tap private savings to finance its expenditures.

Indirect taxes:

Indirect taxes predominate as a source of revenue in underdeveloped countries largely because they have been easier to collect than direct taxes. They will continue to play an important role. But that role will be secondary, because indirect taxes will not generally provide revenues elastic enough to maintain the dynamic equilibrium of the public finances. Restrictions imposed by other development policy objectives and the narrow base of some of the more income elastic indirect taxes also limit the contribution that these taxes can make.

Taxes on the foreign sector. The income elasticity of foreign trade taxes depends on both the rate of growth of trade and the rates

applied. Historically, taxes on exports of the developing countries have not grown enough to compensate for the growth of government expenditures without a change in the tax rates levied. In addition, some investigators have maintained that the share of the foreign sector in national income tends to fall in the course of development, which would further tend to reduce the income elasticity of revenues levied on this sector. To these considerations may be added problems concerning the instability of exports, GATT obligations, and possible adverse effects on the distribution of income—all of which may make taxes on the foreign sector less attractive. Under these circumstances, a constant increase in tax rates is required, which may be politically difficult as well as subject to the limitations set by the price elasticity of demand.

Sales and turnover taxes. Whether a sales or turnover tax can make a valuable contribution to the elasticity of the tax structure is difficult to decide a priori and depends, partly, on the form of the tax. In general, one might expect the revenues from a sales tax to grow approximately proportionally to the growth in national product; however, since monetization of the economy in the early stages of development will tend to expand relatively rapidly, it is likely that the income elasticity of revenues will be greater than unity during this period.

The role that the sales tax could play in total revenues, however, has been seriously limited by the exemption of food and other essential items in order to reduce vulnerability to wage-price spirals. Furthermore, in all except, perhaps, a few developed countries, there is widespread evasion of sales and turnover taxes, although improved tax administration can sometimes produce adequate returns in the major cities.

Excise taxes. Excise taxes offer many opportunities for obtaining revenue with a high income elasticity; but the tax base in less developed countries is likely to be limited, especially if one thinks in terms of the traditional range of taxable goods—various manufactures, alcohol, tobacco, and petroleum products. The desire to stimulate industrial production places other limitations on this source of revenue.

Non-tax revenues:

Income from government enterprises, marketing boards, and various types of royalties make up a substantial part of public revenue in many countries. It is very difficult to make generalizations in this area. The inability of many government enterprises to earn a profit is often the result of operating these enterprises with other than solely economic objectives in mind and is part of the general

problem of striking a balance between the rate of growth of social expenditure and of revenue. Furthermore, the income of public enterprises and marketing boards is often earmarked and not available to offset the general expenses of government.

High-Growth vs. Low-Growth Countries

In terms of the evolution of public finance, the results of our study seem to indicate that the more relevant distinction is between countries that are developing and those that are not, rather than between countries that are developed and those that are less developed.

Low-growth countries have a greater GNP elasticity of social expenditures than high-growth countries. This very fact may slow economic development, since, as we have seen, social expenditures are one of the major determinants of the overall rate of growth of government expenditure. The faster government expenditures grow, the harder it is to obtain a dynamic equilibrium between the rates of growth of expenditure and revenue. This, in turn, might adversely affect a country's rate of growth. This tends to support the view that the forces which shape the pattern of government expenditures and revenues arise from the dynamic process of growth itself.

If this study is suggestive of any policy implications, it is that the less a government is able to control the rate of growth of its social expenditures, the greater must be the built-in elasticity of its tax structure and the more frequent must be the revision of its tax rates, if economic growth is to be achieved. In practice, a country cannot choose whether or not to have an elastic tax structure. It can only choose whether elasticity will be achieved largely through structural changes in the tax system or via ad hoc adjustments in rates, and whether these changes and adjustments will be made promptly or with a disturbing lag. In order to achieve an income elastic tax structure, most countries will have to depend increasingly on direct taxes and improved tax administration.

[Excerpted from "The Evolution of Public Finances During Economic Development," Manchester School of Economic and Social Studies, Manchester: Volume XXXV, Number 1 (January 1967), pp. 19-51.]

# IMPROVEMENTS IN TAX ADMINISTRATION

R. J. Chelliah

[Higher tax rates are not an adequate substitute for effective collection of taxes which have been set at realistic rates. Better administration leading to better enforcement is the most important way of increasing tax revenue in the developing countries.]

It is a truism to say that a tax system is no better than its application, however modern and sophisticated it may look on paper. It is idle to introduce taxes for whose enforcement there is insufficient administrative capacity. Therefore, it could be argued that, in view of the relatively low administrative capacity at present available in most underdeveloped countries, it would be wise to keep the tax structure as simple as possible and to concentrate on a limited number of large sources of revenue rather than venture into sophisticated innovations like a progressive spending tax, or disperse the limited administrative skill over a variety of unrelated small levies.

But a tax system cannot be made simple beyond a certain point. The growing complexity of the economy and the requirements of equity call for a degree of tax complexity which can be handled only by a trained and efficient staff. It is the opinion of many competent observers that improvement of tax administration leading to better enforcement of existing taxes is the most important way of increasing tax revenue in the developing countries.

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## Better Methods

Improvement of fiscal administration involves better organization, more efficient methods, and more thorough training of staff. These are matters which fall largely within the realm of public administration and are beyond the scope of this paper. However, we may briefly refer to a few important complementary steps which should accompany improvements in organization and the quality of staff.

Data collection and research. Currently, costs of collection of the more important taxes are well below 5 percent of yield in the countries of Asia and the Far East. It is often not realized that spending a little more to set up a scientific system of tax administration, with a well-paid staff, would be extremely profitable. Moreover, research in the field of taxation, particularly about the actual working of the taxes in operation, is at a rudimentary stage in many countries and almost completely absent in others. Even basic data relating to the number of income tax payers, the amount of assessed income, the total or commodity-wise turnover assessed for sales tax, etc. are not available in some countries.

Adequate data collection and competent analysis are among the first prerequisites for any programme of fiscal reform. There is also need for a tax research bureau consisting of experts in economics, taxation, accountancy, tax legislation, and tax administration seconded from the field. The bureau would conduct continuing studies of the different taxes and indicate to the government changes in the structure and law that would remove basic defects and adapt the system to developments in the economy. In short, it would provide part of the basis for long-term fiscal planning. It is also desirable for each major tax department to have a research unit to meet its own needs and to service the bureau.

Co-ordination among tax authorities. In many underdeveloped countries, it is not uncommon to find a kind of "balkanization" of tax administration. This is the result of asking several departments to collect different taxes. While it is only natural for different governments—federal, state, and local—to have their own tax collecting agencies, there is no reason for balkanization of collection within each layer of government. Co-ordination of the work of different agencies and exchange of information should be made common practice. To give only one example, the income tax department and the sales tax department have to work closely together. In fact, the former can gain very useful information not only from sales tax data, but also from property tax returns.

Use of statistical techniques. Statistical sections are generally weak in tax collecting departments and even in ministries of finance. Scientific methods of investigation and proper statistical techniques should be used for revenue forecasting, estimates of evasion, study of the effects of new provisions, etc. The sample survey technique can be employed with advantage for many purposes—for example: sample checking of assessment to be conducted by a supervisory authority, intensive study of returns of a sample of assessees, and sample study of assessees over time to gather information on the changing position of taxpayers. For this, the installation of modern data processing equipment should be considered.

For proper administration of direct taxes, as complete information as possible on capital transactions is required. Hence, all income tax payers with an income above a certain level should be assigned a code number and copies of documents relating to capital transactions by them should be automatically routed to the tax offices concerned.

## Realistic Levels of Tax Rates

It might seem a commonplace to say that the rates of taxes must be set at levels capable of effective enforcement. But this simple rule is apparently forgotten in some underdeveloped countries. Indeed, higher rates are often regarded as a substitute for effective enforcement of taxes at the existing rates.

A realistic level of rates can be arrived at only by taking into consideration tax enforcing capacity, degree of taxpayer compliance, integrity of administration, and the general attitude of the population. In the long run, it is far better to create a relatively clean atmosphere and healthy practices at a lower level of rates than equity calls for, and to raise the level gradually, than to attempt to move in one jump to the levels reached in developed economies. This applies particularly to direct taxes. It is also true that high rates which are not uniformly enforced lead to grave inequity.

This is not to say that rates should be frozen at extremely low levels or that with lower rates there would be no problem of evasion, but only that a difficult problem is made incomparably more difficult by very high rates and that the will to enforce is more important than the willingness to raise rates.

## Other Aspects

There are a number of other aspects of the problem such as codification, legislative drafting of tax laws, collection procedures,

and public relations (to mention only a few examples), which cannot be considered here. Suffice it to say that if the rates are set at realistic levels, if the taxes are free from grave inequities, and if steps are taken to improve the administration, a high degree of income elasticity can be confidently predicted at least in respect of the major taxes, the process of modernization of the economy being of great assistance in this matter.

If rates have been set after careful consideration, then tax evaded is the amount which the groups concerned are considered to be able to pay under given circumstances but which they are not actually paying—that is, tax potential. Tax evasion can perhaps never be reduced to zero. But if the magnitude of evasion has been estimated, it is the tax potential reflected by the amount of evasion revealed which must be tapped first.

[Excerpted from "Tax Potential and Economic Growth in the Countries of the ECAFE Region," Economic Bulletin for Asia and the Far East, New York: Volume XVII, Number 2 (September 1966), pp. 44-46.]

# THE ROLE OF EXPORT TAXES

Richard Goode, G. E. Lent, P. D. Ojha

[Administrative convenience is the chief justification of export duties in developing countries. Nevertheless, the gradual substitution of other taxes seems desirable in view of the limited possibilities of shifting the burden of export taxes to foreign buyers, and the need to remove handicaps to the exports of primary products. Temporary export taxes can be useful as a counter-cyclical device or to absorb windfall profits associated with a currency devaluation.]

Export duties and marketing boards' surpluses are likely to remain important as regular revenue sources in a number of primary producing countries. Their administrative simplicity and political acceptability will often outweigh their shortcomings.

Almost all tropical agricultural products are now subject to export duties. In Asia, export duties are imposed on rubber, jute and jute products, coconut products, rice, tea, spices, vegetable oils, wool, and some textile products. In Latin America, there are export taxes on sugar and sugar products, bananas, wool, hides, meats, and other products. In Africa, export taxes (including marketing boards' surpluses, which are economically similar) apply to coconut products, palm oil, sisal, tobacco, spices, and groundnuts. In all three continents, coffee, cocoa, and cotton are taxes. Duties are also levied on exports of tin, iron ore, bauxite, diamonds, and a few other

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minerals by various countries. On the other hand, many developing countries (e.g., Liberia, Panama, Jamaica, Philippines) depend very little or not at all on export taxes, despite large export sectors.

## As a Source of Revenue

Export taxes account for 10 percent or more of central government revenue in such countries as Uganda, Malaya, Sudan, Ceylon, Nigeria, Thailand, Colombia, and El Salvador. Their yield has fluctuated widely, as a result of variations in the volume and value of exports and changes in tax rates and coverage. In general, revenues rose sharply in 1950 and 1951, then declined almost as sharply during the post-Korean War recession; they generally recovered in 1955, but later receded again in almost all countries. Ghana and Uganda have experienced the largest fluctuations in the relative importance of export tax revenues.

Fluctuations of revenue pose problems of treasury management, and in this respect they are disadvantageous. From the standpoint of compensatory fiscal policy, however, variations in tax revenue, accompanied by relatively stable government expenditures, are regarded as desirable because they help to reduce the instability of the economy as a whole [see page 79].

## As a Tax on Foreigners

The legal incidence of export taxes is generally on the "exporter," from whom the government collects the tax. In actuality, however, the tax may be shifted forward to buyers—that is, paid by foreign consumers; it may be borne by domestic producers; or it may fall on landowners or workers. The distribution of the export tax burden among economic groups is frequently unclear, though it tends to fall on those in the weakest bargaining position. While this uncertainty sometimes reduces political opposition to export taxation, it has disadvantages for other aspects of public policy, such as income distribution and production incentives.

Elastic supply and inelastic demand are conducive to shifting a tax forward, whereas the tax tends to rest on producers under conditions of inelastic supply and elastic demand.

If the taxing country accounts for only a small part of world production, as is generally true, there is little opportunity for shifting the tax. Its exports cannot be sold at more than the world price, and any reduction in their volume can be made up by other countries. Regardless of the elasticity of world demand for the commodity, the elasticity of demand for shipments from one country with a small output will be very high at prices above or below the world price.

When the taxing country supplies a large part of total world exports, or when similar taxes are levied by several countries, the tax is more likely to result in higher prices in external markets. But such shifting of the tax has its limitations: a price rise may, in time, stimulate production elsewhere or encourage substitution of other products—synthetic rubber for natural, one vegetable oil for another, aluminum for copper, etc. The Chilean nitrate industry is a striking example. Once a natural monopoly, it was heavily taxed and organized as a cartel on the assumption that taxes and high prices would be borne by foreign consumers. After World War I, synthetic nitrogen and by-product nitrogen began to offer strong competition. Chilean production fell sharply; its share in the world market had declined to 10 percent by the early 1930s. The industry had to be reorganized and tax and royalty payments moderated.

With rare exceptions, countries that are considering export duties should regard them primarily as taxes on their own producers and traders rather than as a means of taxing foreigners.

## Effects on Export Volume

The probable adverse effects on exports must be counted as a disadvantage of export taxation as a regular source of revenue.

In the past, many observers have argued that moderate taxation would have little influence on export volume because, over a rather wide range, producers in the less developed countries were insensitive to changes in net prices. It was even contended that a tax might stimulate output because farmers would have to work harder to satisfy their income aspirations.

These possibilities cannot be dismissed, but a growing body of experience, statistical studies, and expert opinion indicate otherwise. If a country imposes a permanent export tax or operates a marketing board so as to keep prices received by producers below world prices on a given commodity, it should ordinarily expect production—and, hence, exports—to be reduced, or its growth retarded, either immediately or as soon as the crop's growth cycle permits. The strongest case for a prolonged use of export taxes is in support of an international commodity agreement that involves the deliberate limitation of exports.

It does not follow, however, that the effect on export volume is a decisive objection to export taxes. Several other considerations are relevant:

First, short-run price elasticity of supply of annual crops and long-run price elasticity of tree crops seems to be below unity,

sometimes below 0.5. This suggests that the percentage reduction in exports of the taxed agricultural commodity will be smaller than the effective tax rate. In other words, the gain in government revenue will exceed the loss of export earnings of the commodity taxed. Information on the long-run elasticity of mineral exports is even less adequate than that of agricultural exports, and it is hard to say how the revenue gain from a tax on minerals will compare with the export loss.

Second, a reduction in production and export of the taxed commodity usually does not entail an equal reduction in total production. Some resources will be transferred to other industries. The loss will not be the gross amount of their product but, rather, the difference between their (social) productivity in the taxed export industry and in the industry to which they are transferred.

Third, other kinds of taxes may also hinder production and exports. Since revenues must be obtained, the real question is how this can be done with the least harm while observing the requirements of equity and administrative efficiency.

Economic Stabilization

Considerable attention has been given to the use of export taxes as a counter-cyclical device to stabilize the economy. Variations in export taxes—achieved through tying tax rates to export prices, changes in the tax law, or application of sliding scale rates—can capture part of the gains arising from higher world prices or mitigate the effect of a price decline on producer incomes. The government can build up reserves in periods of prosperity and expend them in periods of recession, thus reducing fluctuations in money income and expenditures and in imports. The policy, it should be noted, requires that the accumulation and use of fiscal reserves be accompanied by like movements in foreign exchange reserves.

Economic stabilization was the major justification for the widespread increase in export tax rates and the adoption of sliding scale rates during the Korean War boom. These policies were only moderately successful in absorbing incremental export earnings, however. And continuation of high rates of duty into a period of falling prices is likely to be burdensome and to damage export earnings. While this danger can be avoided by adoption of a sliding scale, such a system needs to be carefully designed and administered in order to prevent manipulation of the market.

Currency devaluation. Temporary taxes can be levied on exports with low short-run elasticity of supply in connection with a currency devaluation. The state can thus obtain revenue which will help to

control private expenditures and keep imports down. By sharing in the windfall gains of exporters, the government may also make a devaluation politically more acceptable.

Only rarely, if ever, would it be advisable to levy temporary taxes high enough to absorb all of the increase in the local-currency price of exports, however. Even in the very short run, there is usually some elasticity of supply. It is important, moreover, that any temporary export taxes be reduced—or eliminated—in line with the production cycle and the rapidity with which the volume of exports will respond to changes in prices. Local-currency costs usually tend to increase after a devaluation, and an increase in the net local-currency price received by exporters will ordinarily be required even to maintain the volume of exports over time. A further increase is likely to be needed to stimulate exports.

Ease of Administration

Administrative convenience is perhaps the chief justification of export duties in the developing countries. They have proved particularly effective in tapping the cash incomes of small farmers who could not be reached by income taxes owing to their lack of accounting records.

The most common administrative problems are connected with the correct classification and valuation of commodities to be taxed. Specific duties avoid the problem of valuation. But they are generally regarded as less equitable than ad valorem taxes. Unless the rates are changed frequently, specific duties become more onerous when prices decline and less onerous when prices rise. Relative to value, and usually also relative to profitability, specific duties are heavier on the lower grades of an export commodity than on the higher grades. (This can be an advantage, if the aim is to improve the quality of exports.) A specific tax is more likely to discourage production than an ad valorem tax yielding an equal amount.

The substitution of ad valorem duties for specific duties—or the approximation of this change by the adoption of a series of specific duties keyed to prices—appears to be an improvement that should be practicable for many commodities. Admittedly, ad valorem duties are more complex than specific duties, but they are far simpler than income and profit taxes or land taxes.

When the tax is linked to market prices, it is safer to use quotations on external organized markets than local prices. The latter may be subject to manipulation by large shippers in order to avoid the tax. This is said to have occurred in Ceylon with respect to coconut oil.

## Equity

Export taxes are by nature discriminatory, in that they do not apply to production for the home market and usually do not apply to all exports. Among producers of the export commodities subject to taxation, high-cost producers may suffer because they pay at the same rate as more efficient or better located producers.

Where export duties are important, however, the more refined taxes on income, profits, or land values are usually not realistic alternatives, especially in the agricultural sector. Most countries find it necessary to use a variety of excises, stamp taxes, and other impersonal taxes that do not conform to the highest standards of equity. Export taxes may well be less arbitrary than some of the traditional indirect taxes.

## In the Future

In the long run, export taxes will probably diminish in fiscal importance in Africa, Asia, and Latin America, as they did earlier in Europe. Economic development and administrative and political factors can be expected to work in this direction. For tax policy, an important question is whether or not the normal replacement of export taxes by other measures should be accelerated.

If viewed pragmatically, replacement of export taxes will be assigned a lower priority than if viewed idealistically. Also, wide differences among countries will be recognized. Nevertheless, the gradual substitution of other taxes for export taxes seems a desirable goal in view of the discriminatory character of special export taxes and the importance of removing handicaps to the exports of the primary producing countries. (These criticisms apply less forcefully to temporary imposition of export taxes for stabilization purposes or as a means of absorbing windfall profits associated with a currency devaluation.)

A possible way to shift from export to other taxes would be to treat the export tax as an advance payment of income or profits tax, as in Peru, or of land tax. This technique might be suitable for mines or large-scale agriculture. It does not seem feasible for small farmers.

In many primary producing countries, the most immediate concern will be the adaptation of export taxes to changing conditions and their improvement rather than their replacement. In this connection, it is particularly important for governments to pay close

attention to trends in prices and costs and to be prepared to reduce export taxes when unfavorable cost-price relations seriously threaten the volume of exports.

[ Excerpted from "Role of Export Taxes in Developing Countries," International Monetary Fund Staff Papers, Washington, D. C.: Volume XIII, Number 3 (November 1966), pp. 453-503. ]

# TAXING REAL ESTATE EFFECTIVELY: A PROPOSAL

John Strasma

[Self-assessment is the most practical approach to taxing real property. It can succeed if owners believe they may be forced to sell their property at the declared value. Allowing private citizens, as well as the state, to buy would make this threat credible.]

Few are the finance ministers who have not longed for increased revenue from real estate taxes. Inflation and population growth without corresponding increase in property tax values have reduced this traditional revenue source to insignificance. Could it not again become an important source of tax revenue? Could it not create a pressure tending to the more efficient use of urban and rural land?

Efforts to increase property taxes fail most frequently because it is physically impossible to revalue real estate in the fleeting period (often a year or less) during which a president, finance minister, or political party enjoys the power and has the will to raise property taxes effectively. A rapid revaluation has some chance of success, but a careful, painstaking reassessment effort by traditional means is likely to be abolished or compromised into innocuousness before the tax can come into effect.

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How can underdeveloped countries obtain up-to-date property tax assessments rapidly and at low cost, without adequate valuation departments?

Self-assessment, in which the owner does most of the work of identifying, describing, and evaluating his property seems to be the only approach possible for most underdeveloped countries. The success of the system depends, however, on making the threat of having to sell at the declared value credible to all owners.

A government realty agency might be empowered to buy and resell any property it deemed grossly undervalued. But experience shows that such an agency might soon be corrupted. An employee who had been bribed or pressured to buy or to ignore a specific property could not be detected; he could always say he thought the price was reasonably declared, since an estimation of market value is essentially subjective and even, in part, intuitive. The weakest link in the government realty agency idea as an enforcement technique is, thus, precisely that it is part of the government.

Arnold Harberger, in 1962, suggested that the threat of purchase at tax value would become credible if private citizens, as well as the state, were allowed to buy real estate at the price declared by owners, plus some margin (say, 20 percent) of profit for the owner.

For "mere" under-declaration of taxes, however, forced sale seems to be excessive punishment, especially for owners who declare in good faith but are simply ignorant of the current value of their property. As an alternative, Nicholas Kaldor has proposed that owners be permitted to retain their properties after an offer, provided they accepted a new tax assessment even higher than the offer they rejected. Building on this suggestion, one can take care of other problems relatively simply. To discourage initial under-declaration, awaiting an offer, the owner should also be fined or the tax increase made retroactive for, say, three years. Next, the missing incentive element can be supplied by paying part of the money recovered from the owner to the person who demonstrated his confidence in his own valuation of the property by making a bona fide offer to buy at a price well above the declared value. Even after sharing the tax increase, the government would have gained substantially in present and future revenue.

The first requisite, as under any assessment technique, is still that the government genuinely desire reassessment near market values. The second is that it have the will (and votes or rifles) to overcome the inevitable opposition of property owners. Given these two preconditions, the present form of the proposal appears to be practical, effective, and fair to all concerned.

## How It Works

The first step is to adjust all existing assessments arbitrarily by a factor aimed to put the average property at or above market value, taking into account 1) general inflation, 2) rising income-producing value of real estate as a result of population increase, roads, and other aspects of economic growth, and 3) the average initial underassessment of property. This will separate the inevitable opposition to higher taxes from the legitimate discussion of the most practical and just way to assess those taxes. A simple rate increase won't succeed, because it confuses issues and perpetuates underassessment, hampering the operation of other taxes related to property values (e.g., income and inheritance taxes).

The second step is to escape the enormous burden of traditional appeals by replacing recourse to the courts with permission for owners unhappy with the index-adjusted values to substitute their own valuations. Owners of properties not previously assessed at all would also be required to declare the value. Owners would hesitate to understate market values more than 20 percent or so, because anyone could offer to buy the property for its declared value plus a minimum of 10 percent to compensate the owner for the nuisance of moving and to cover any transfer taxes. If the owners declined to sell, the tax value would be raised to the amount rejected and a fine levied, the money to be shared with the frustrated bidder.

In a third stage, all assessed values would be published and subject to bids. Owners whose properties were still underassessed even after the index-adjustment would thus be brought into line; previously, only those who thought their property overassessed were involved.

All assessments, declarations, and offers would be subject to automatic adjustment should inflation exceed certain rates per year or month, or in cases of sudden devaluation.

Owners unwilling to be subjected to this procedure could request official assessment, but would be obliged to pay the full cost of the appraisal to the tax service. The charge would be high enough that the service could obtain appraisers who would be satisfied with their fees (from the tax service) and not be tempted to accept bribes from owners. At the very least, corruption should be much less than at present, when appraisers are usually overworked and are paid salaries so low that they feel obliged to accept "gratuities" from property owners.

The tax service would have the option of rejecting the first appraisal and assigning a second appraiser (at its own expense). The owner, if dissatisfied with the first appraisal, could likewise request a second valuation—at his expense. In either of these cases, the two values would be averaged for the tax valuation. The tax service would have no further appeal; the owner could appeal only by submitting his own value and returning to the market-enforced system.

## Long-run Goals

The measures suggested here are not a valid substitute for land reform, nor will they solve every problem associated with taxation and public administration in underdeveloped countries. They are, however, intended for use right now, with the staff, the quality of public administration, and the character of taxpayers as they now are.

In the long run, technical assistance and training programs (financed with part of the higher property tax revenues) would permit a cadastral survey. These would also make possible the organization of a technically competent, responsible valuation department and a land-use planning agency, both of which are essential to modern public administration.

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# THE SALES TAX IN HONDURAS

John F. Due

[ The sales tax in Honduras is basically a single-stage retail tax. Small retail firms, exempt from paying the tax directly, are mostly covered because the goods they buy are taxed at the wholesale level. Administration is thereby greatly simplified. ]

A sales tax, if properly used, can make significant contributions to government finance and economic development. That in Honduras is greatly superior to the sales taxes elsewhere in Latin America and, indeed, in most other countries of the world. Levied at a uniform 3 percent, it now accounts for about 7 percent of the total tax revenues in Honduras.

The sales tax has a number of advantages. It can produce substantial revenue at moderate rates. Its revenue elasticity should be relatively high, since, in a developing economy, consumer expenditures on taxed commodities should rise more rapidly than national product. Since the tax burden is placed on consumer spending, there is some incentive to consume less and make more savings available for capital formation. Insofar as consumption of imported goods is curtailed by the tax, more foreign exchange will be available to import capital goods. With basic food and medicine exempt, the tax conforms reasonably well to usual standards of equity and yet ensures some contribution to the support of government from all families except those at a bare subsistence level, including large numbers of persons not subject to income tax. The

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sales tax is not, however, a suitable instrument for basic social reform, nor does it lend itself well to such refinements as numerous exemptions or varying rates for special purposes.

The tax in Honduras is basically a single-stage retail sales tax, collected in part at the wholesale level. It applies to products sold for use or consumption by 1) retailers with sales in excess of L3,000 [1 Lempira = $.50] per month; 2) wholesale suppliers and manufacturers selling to retailers smaller than that. It also applies to certain service establishments, such as hotels and restaurants, and to goods imported for use rather than resale.

The exemptions to the sales tax can be grouped according to their purpose: 1) articles used in production (e.g., raw materials, industrial machinery, fertilizer and seed for farm use, etc.); 2) basic goods used by persons in the lowest income groups—food, medicine, and cheap clothing, as well as books and school supplies; 3) sales for export; and 4) miscellaneous.

All firms with retail sales in excess of L3,000 per month must register and receive a "carnet." The tax-paying firm then makes a monthly "deposit" of the tax due with the local branches of the Central Bank and, at the end of the year, files a detailed return, showing sales, tax due, and amount paid during the year. The number of firms failing to pay the tax is not extremely large.

Identity of carnet and income tax file numbers suggests to the taxpayer that figures he reports for one tax may be compared with the figures he reports for the other, thus encouraging compliance. But experience has demonstrated clearly that the primary element in effective sales tax administration is good audit. A staff of 16 has been used for this purpose. The direct monetary yield of the audit program has been double its cost, and its psychological value has been many times greater.

When errors are discovered in audit, regular penalties are applied, including 10 to 20 percent of the tax due plus 1 percent per day interest. These charges have been criticized as unreasonable and creating strong taxpayer ill will. Unless there is evidence of intent to defraud, reasonable penalties which vendors know will be uniformly and fairly enforced are much more effective.

In its present form, the sales tax in Honduras will produce increasing revenue as national income rises, and can remain a permanent element in the tax structure. It avoids the disadvantages and distortions inherent in turnover, manufacturers, and wholesale taxes as well as the complexity of the value-added tax. And it allows substantially greater revenues at a given rate than

these other forms. It has been the universal experience that both turnover and manufacturers sales taxes lead to increasing complaints and, finally, to strong pressure to change.

The exemption of small firms (with monthly sales under L3,000) greatly simplifies the operation of the tax. While it causes some inequality and economic distortion, this is probably better than attempting to tax all retailers. Since tax is already collected at the wholesale level on sales to small firms, the latter course could easily result in the collection of less revenue rather than more. The present single, low rate is easy to administer, minimizes pressure toward evasion, and keeps the advantage to small vendors low.

The level of the rate must be dictated primarily by revenue needs. If conditions require it, a moderate increase in the 3-percent rate should cause no serious difficulty. Even at 3 percent, the tax can yield additional revenue if its coverage is extended—e.g., to more services (laundry, repairs of taxable commodities, telephones, etc.); to cars and gasoline (presently excluded because they are subject to other taxes, but used, typically, by those at the highest income levels); and to rentals of taxable (not real) property.

[Excerpted from a working paper, "The Sales Tax in Honduras: Analysis and Recommendations," June, 1966 (mimeo).]

Krivine, David (ed.), Fiscal and Monetary Problems in Developing States (proceedings of the Third Rehovoth Conference, August 9-18, 1965). New York: Frederick A. Praeger, 1967. 404 pp. $12.50.

The Third Rehovoth Conference brought together leading economists, tax experts, and financial advisers from forty countries and seven international organizations. Their papers and discussions focussed on the impact of financial structures and policies on savings and investment for development.

Nicholas Kaldor suggests that tax revenues are low in less developed countries in part because of low income, but also because their tax potential has not been effectively tapped. Changes in taxation systems could reduce persistently large inequalities of wealth and sumptuary consumption. Heavier agricultural taxation is particularly recommended in order to stimulate better use of agricultural resources.

Tax structure is of key importance in the drive for development, according to Ralph K. Davidson. The tax system can be utilized to shift resources to more productive uses; it can induce taxpayers to work longer and to increase their investment for growth. Tax structures in less developed countries, presently based largely on export and import duties, will have to become more income-elastic, so that more revenue is automatically brought in as incomes rise.

Richard Goode examines how primary producing countries can use fiscal measures to reduce the impact of variations in harvest and fluctuations in their terms of trade by tying export taxes to fluctuations in export volume. He argues in favor of prices of government services being set at levels that will cover costs and even, in some cases, create a surplus to finance future expansion.

Other papers in this collection discuss the advantages and costs of moderate inflation in reallocating economic resources. Harry G. Johnson concludes that "while a policy of financing development by deliberate inflation has strong attractions theoretically and politically, the possibilities of stimulating economic development by these means are quite limited." On the contrary, they are "in practice... likely to retard economic growth."

P. N. C. Okigbo suggests that savings through government budgeting may be difficult, too. Earmarking a specified surplus for development may be necessary to insure funds for productive investment and to resist temptations to increase current social expenditures. He cites the Nigerian experience, where simply relying on residual funds from government budgets to finance development between 1955 and 1962 became increasingly unworkable.

# PROGRAMS FOR YOUTH SERVICE

## YOUTH SERVICES: A SURVEY OF EXPERIENCE

C. Rossillion

[ Youth services fall, broadly, into two categories—those that offer unskilled, unemployed youth some training and the possibility of a productive future, particularly in agriculture, and those that emphasize service to the community by the educated elite. ]

Nearly forty countries to date have experimented with some kind of youth service—that is, a special scheme under which young people undertake continuous service in economically and socially useful activities for a period of one or two years. Other special programmes for the training and employment of youth (out-of-school activities, short periods of voluntary work, or social and educational service) may be comparable in some ways; but from the institutional standpoint, and because of their duration and intensive nature, the continuous services are of particular interest.

On the whole, youth services have been developed in response to certain acute problems of developing countries—lack of adequate education and training, imbalance between aspirations and employment opportunities, a tendency to spurn

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the traditional rural way of life and to move to the towns, etc. Although fundamental solution of these problems requires long-term comprehensive development policy, the youth services attempt to apply short-term remedies—for example, by providing the general and civic education that many young people lack; giving them a good start in life, particularly in rural areas, while at the same time reducing urban unemployment and the drift to the towns; and offering them at least temporary occupation involving education and useful work. The economic and social aspects of a given scheme will differ, in the first instance, according to whether or not it requires a new institutional basis. But above all, they will vary according to the country's needs, its means, and—particularly—its employment situation.

In general, youth services in developing countries are of two kinds: 1) organisations built around undereducated youth which aim at increasing employment opportunities, and 2) special programmes which draw on educated, skilled (or semi-skilled) youth. The work of both types is closely related to the overall requirements of national development.

Employment-creating Programmes

Broad-based services are not yet very large, comprising between 1,000 and 5,000 participants to date, and vary in many respects from country to country. As a general rule, however, they take young men of about 18-20 years, enrol them in a disciplined organisation, usually for a period of 18 months to two years. These youth receive some general, civic, and vocational training and engage in practical development activities, usually in agriculture; the latter is often intended to lead to their own resettlement in modern rural institutions, such as cooperatives. Those in Africa—variously called "civic service" (Ivory Coast, Malagasy Republic, Niger, Upper Volta), "youth pioneers" (Cameroon, Central African Republic, Dahomey), or "national youth service" (Kenya, Tanzania, Zambia)—are fairly typical.

Some of the services include both men and women (the latter still in a minority), while in other countries there are separate services for women. In several cases, civil engineering branches have also been established, particularly for urban youth, whose settlement on the land has proved in practice to be difficult.

These services generally rely on volunteers. Because large memberships are impracticable at present, recruitment procedures aim at creating a group of potential community leaders rather than at systematic enrolment of the young unemployed. The services usually include some army-style organisation and

training, intended either as real technical preparation for national defence or to promote civic sense, group discipline, and prestige. The ranks, disciplinary methods, and uniforms are more or less modelled on the armed forces. The services are often administratively organised as a branch of the army or come under the same ministry.

In some countries, conscription for military service has provided a framework for the engagement of some young people in group activities for training and economic development. As is well known, young men and women who have chosen to enter the Israeli Nahal ("fighting pioneer youth") during their compulsory national service engage in training and pioneer development work, agricultural and other, usually with a view to their own subsequent settlement in border areas. Although this system constitutes a special case because of its links with national defence, it has wider implications in the field of development policy. Israel has provided inspiration for, as well as technical assistance to, many of the African services mentioned earlier. Again, under "commuted military service" in the French West Indian islands and Guiana, some of the young conscripts are organised as a special corps in which they receive vocational training and carry out works relating to the infrastructure, rural development, welfare services, improvement of housing, etc. Yet another such scheme, more closely concerned with productive activity pure and simple, is found in Afghanistan, where the Labour Batallions—specialised units comprising army recruits, technicians, and equipment—are employed in public works projects.

The "civic action" programmes of most South American countries generally consist of participation by the regular army in regional development operations, relating not only to the economic infrastructure but also to agricultural development (rural settlement, forest clearance or reforestation, irrigation, etc.), assistance to community development in the villages, literacy and education, health and hygiene. In many countries, and in many political and economic contexts, it is an old tradition for the army to undertake public works such as road and bridge building. Sometimes, as in Peru [see DEVELOPMENT DIGEST, October 1966] and Argentina, the army is also used to carry on large communications programmes and other infrastructure projects, particularly in difficult or distant areas. For the tens of thousands of youths who take part, these public services are performed in much the same manner and under the same basic conditions as conventional military service.

Usually the development operations undertaken by the army are aimed at promoting the public interest, and their effect on the vocational training and economic future of the young participants is mainly consequential. But these secondary aims are tending, in

many cases, to become the prime concern. Vocational training courses are sometimes given before the young men leave the service so as to prepare them for civilian life. In Colombia, for example, a large number of men are detached from military service every year and assigned to the civilian National Apprenticeship Service for six-month vocational training courses. In Ecuador, a special service for agricultural training and resettlement, set up within the army and drawing its inspiration from the Nahal in Israel, has just been established for rural youth in some regions.

Programmes for the Educated

Another important aspect of youth service consists in arrangements made for young graduates, technicians, doctors, and the like to take part in economic and social activities in the public interest, under conditions differing from those of ordinary employment. The service rendered to the community is the most prominent feature of such arrangements; but the educative effect on the young people concerned may also be an essential factor. Service of this kind can contribute—if not to vocational training in the classic sense—at least to the young people's general experience and their awareness of their country's economic and social realities, from which they may have been sheltered in the past; it may also assist in the emergence of a long-term vocation. In some cases, establishment of a special service for young graduates has served to reduce their concentration in the cities and to lower unemployment amongst them.

Several developing countries have adopted this method, to meet acute shortages of trained personnel in fields such as teaching, technical services, and health in rural areas. In Ethiopia, for instance, participation by the educated in development activities has become the general rule, since no student may graduate from a university until he has completed one year's service in a rural community [see p. 99 ff.]. In Iran, a special "Education Corps," also known as the "Army of Knowledge," was set up in 1963 with its own organisation and uniform. After a special period of instruction, the young graduates serve as village teachers instead of doing military service; although the period of service is 18 months, many stay on for much longer [see DEVELOPMENT DIGEST, October 1966]. Building on this experience, Iran has also established a "Health Corps," for young doctors and members of auxiliary health professions, and a "Rural Development Corps," for young engineers and technicians. In Tanzania, the broad-based National Youth Service [see earlier] has had, since 1966, a special branch for two-year enrolment of young graduates as teachers, engineers, medical practitioners, and so forth; completion of this period will be required for subsequent admission to public employment.

In some cases, establishment of a special service for young graduates may be favoured by the existence of traditions of community service or traditional institutions. In others—particularly where most young graduates want to work in the cities—a greater educational effort has to be made to gain acceptance for them. In all cases, it is highly important—though not always easy—to promote conditions and administrative machinery conducive both to proper motivation of the young people concerned and to efficiency in the service itself.

[ Excerpted from "Youth Services for Economic and Social Development: A General Review," International Labour Review, Geneva: Volume 95, Number 4 (April 1967), pp. 1-12. ]

## GOVERNMENT SUPPORTED VOLUNTEERS, JANUARY 1, 1967

The following chart shows the approximate number of volunteers of all types supported by each country. They include "export" volunteers, who serve full time for at least a year outside their own countries; "domestic" volunteers, educated and skilled individuals who serve within their own countries both full and part time for periods of up to two years; and "youth service" volunteers, under-educated, disadvantaged youth serving within their own countries in programs which give them general education and skill training, and involve them in national development, who serve part and full time for periods of up to two years.

| Country | Export | Domestic | Youth Service |
|---|---|---|---|
| Australia | 75 | | |
| Austria | 20 | | |
| Belgium | 330 | | |
| Cameroon | | | 500 |
| Canada | 570 | 75 | |
| Central African Rep. | | | 1,200 |
| Chad | | | 500 |
| Chile | | 3,000 | |
| Congo (Kinshasa) | | | 700 |
| Costa Rica | | 180 | |
| Denmark | 100 | | |
| Dahomey | | | 375 |
| Dominican Republic | | 30 | |
| Ethiopia | | 265 | |
| France | 2,533** | | |
| Gabon | | | 50 |
| Germany | 930 | | |
| Iran | | 11,000* | |
| Israel | 20 | 2,000* | |
| Ivory Coast | | | 800 |
| Jamaica | | 100 | 1,000 |
| Japan | 120 | | |
| Kenya | | | 4,300 |
| Liberia | | | 300 |

| Country | Export | Domestic | Youth Service |
|---|---|---|---|
| Liechtenstein | 3 | | |
| Malagasy Republic | | | 1,000 |
| Malawi | | | 1,500 |
| Malaysia | | | 200 |
| Mali | | | 4,000 |
| Nepal | | 5,000 | |
| Netherlands | 180 | | |
| New Zealand | 66 | | |
| Niger | | | 200 |
| Norway | 45 | | |
| Panama | | 70 | |
| Peru | | 300 | |
| Philippines | 140 | 2,100 | |
| Senegal | | | 720 |
| Sweden | 80 | | |
| Switzerland | 70 | | |
| Tanzania | | | 2,000 |
| Thailand | | 50 | |
| Togo | | | 100 |
| United Kingdom | 1,730 | | |
| United States | 12,313 | 18,000 | 28,500 |
| Zambia | | | 1,000 |
| TOTAL | 19,259 | 42,170 | 48,945 |

*These programs are alternatives to military service.
**2, 143 are in program alternative to military service.

[Source: International Volunteer, International Secretariat for Volunteer Service, Washington, D.C., Volume IV, Number 2-3 (April-June, 1967), page 12.]

# THE ETHIOPIAN UNIVERSITY SERVICE

David C. and Frances F. Korten

[A new degree-requirement program for Ethiopian university students is helping to fill a teacher shortage and is creating an awareness of national development problems. Student reaction has been favorable, despite the compulsory nature of the service.]

In September 1964, Ethiopia's Haile Selassie I University inaugurated a novel program to aid the country's development. The program, named the Ethiopian University Service (E. U. S.), required students to interrupt their university studies to serve their country for one year, primarily as teachers in the rural areas. The 1964-65 program included 134 university students. The program is now in its third year.

It is important to report on three primary aspects of the program which might be of interest to persons developing service programs in other parts of the world: 1) the development of the program; 2) the nature of the service; and 3) the students' reactions to the program. The third aspect is especially important, since student morale is so crucial to the success of a program such as this.

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## Basic Decisions

The idea of a university service program to help overcome the shortage of skilled manpower germinated with the students themselves, during the 1961 meeting of the National Union of Ethiopian University Students. In April 1964, the University Faculty Council decided to make such a program compulsory, by establishing the year of service as a degree requirement. All Ethiopian university degree students were to break their studies between their third and fourth years to serve in rural communities in ways which utilized the skills developed by their university training.

What were the reasons for these decisions? The university made the program a degree requirement because it felt that all the students would benefit from contact with the provincial areas, where many had never lived, and from experience in leadership roles. Furthermore, as all Ethiopian students receive their education free of charge from the government, the service was seen as a form of repayment to the country for its educational support.

The one-year break for the service was placed between the third and fourth academic years to balance two conflicting objectives: On the one hand, the students should have the greatest possible educational qualifications for their jobs. On the other, the experiences and additional maturity gained through the service should be able to enrich the students' university study.

It was decided that the institution for which each student worked (for example, the Ministry of Education) was to supervise the student, and also that the university should maintain regular contact with the students. To accomplish this, each student was to be visited at least twice during each semester, once by one or two full-time administrators of the E. U. S. program and once by a member of the university academic staff. The administrators were to check on the general logistics of the program and see that the students were effectively utilized. The academic staff members were to supervise the academic aspects of the student's work, giving general guidance, encouragement, and assurance that the student had not been forgotten by the university.

In addition to the basic living allowance of $70.00 per month, each student was to be initially provided with a basic kit of materials, including a cot, footlocker, eating utensils, and school supplies.

## Student Assignments

Just what kind of work were the students to do? The practical needs of the country and the skills developed by the university were the crucial determinants here. The resulting service was aimed primarily at providing teachers in the rural areas, mostly in the seventh and eighth grades, a skill level thought appropriate for students who did not yet have their B. A. At this level, teaching assignments could be related to the students' fields of specialization. Also, qualified teachers are especially scarce at this level since professional Ethiopian teachers are mostly available for the sixth grade and below and American Peace Corps Volunteers supplement only the secondary school teaching staffs.

In the first year of the E. U. S., 114 of the total 134 students were in teaching positions. In practice, many found themselves teaching elementary and secondary courses, as well as seventh and eighth grades, often outside of their professional fields. Most adjusted well to this condition once they saw first-hand the great need for teachers.

The work of the twenty remaining students varied according to each student's background. For example, the geology students helped the Ministry of Mines in prospecting for minerals; some agricultural students helped on farms and horticulture stations, while some business students were in positions using their accounting skills.

Almost all the students carried out extra assignments. Most were involved in the national literacy campaign, distributing pamphlets and often conducting classes at night after a long working day. On their own initiative, some E. U. S. participants also organized school clubs to help stimulate and broaden the interests of the provincial students. Others gave special tutorials and homework assignments to their students to raise their schools' standards. A few broadened their contacts in the community through such activities as building demonstration latrines and organizing pest-eradication campaigns.

Consistent with the purpose of helping the students learn more about the provincial areas, all students except those with medical problems were placed away from Addis Ababa. Many worked in provincial capitals, in schools where grades 1 to 12 comprise an average student body of 3, 000. Others worked in villages, teaching in schools of grades 1 to 9 with an average of less than 1, 000 students. The non-teaching students also had jobs away from the capital city, some living in tents, moving from place to place according to their work requirements.

## Initial Student Reaction

How would the students react to such a service? This was a crucial question, especially once the program was made compulsory. Because the students were to be sent off to work on their own with minimal university supervision, the quality of their work would depend heavily upon their individual motivation, which in turn would be determined by their feelings toward the program.

An initial attitude questionnaire developed for the present study was given to the E. U. S. participants during their orientation in mid-September 1964 and a follow-up questionnaire was mailed to them during late May 1965 while they were still in the field, nearing the end of their service. The comments that follow are based on the replies to these questionnaires by 73 of the 134 participants.

From its inception, the E. U. S. program was surrounded by controversy. Once the program was announced as a university degree requirement, the students were aroused. Strikes were threatened, student governments fell, debates were held, polls were taken.

Many participants felt that spending a year in teaching would be a waste of time. They resented being made to participate in a program which did not relate to their vocational interests. As one student commented, "...teaching in a secondary school has nothing to do with my engineering career." Participants assigned to teaching positions felt more strongly that the E. U. S. was an unfair imposition than students assigned to non-teaching positions, whose jobs were more directly related to their skills.

Another source of resentment toward the program was its timing. Many felt that the interruption of their studies would be detrimental and hence preferred to engage in the service after they had finished their undergraduate work.

Some students also felt that the program was poorly planned. The inability of one agency to honor its commitment to the program served as a focal point of student feeling, leading to the generalization that the whole program was poorly planned. The lack of student participation in the planning stage strengthened the students' perception of the program as an imposition. Some also objected because the service had not been a requirement when they entered the university.

However, the students did acknowledge some positive aspects to the program. On the average, the students disagreed with the idea that the E. U. S. would not be beneficial to them personally. Many indicated a feeling that the service would give them a chance to learn

about their own country and would be a maturing experience. And some recognized that, through the program, they would be of service to their country.

## A Shift in Student Attitude

Once out in the towns and villages of the provinces, the students' opinions about the program began to change. By the end of the service, the participants in teaching assignments perceived their work to be more related to their education than did those in non-teaching assignments—a result exactly the reverse of the initial opinion. At the end of the service, the participants in the teaching projects also felt more strongly than those in non-teaching projects that they had been of good service to their country.

One student teacher, for example, made the following two comments. Before the service: "...it is one-sided—it has been superimposed on students by selfish, pseudo-authorities of the university." After the service: "I personally felt like that before.... But now, after I realized the great service I did for the countryside students and communities, I feel the E. U. S. was not an unfair imposition."

Largely responsible for the teaching participants' change in attitude was the realization that the E. U. S. filled a critical need for teachers. The students seem to have developed an acute awareness of the teacher shortage. Typical comments were: "If not for the E. U. S., there would have been no junior secondary school where I taught;" "Of 32 teachers in my school, 10 were E. U. S. and there was still a shortage;" "The biology class I am teaching was not offered last year for lack of a teacher." Thus, the teaching participants' final, more positive attitude toward the program may have been caused partly by their stronger perception of being needed in the jobs they were doing. The non-teaching participants, in contrast, changed very little in their views of the service.

## Policy Issues

The issue of whether the service should be voluntary or compulsory is perhaps the most important question which arises in establishing service programs of this nature. Among the Ethiopian participants, there was almost unanimous support for the program's continuation and a strong feeling (81 percent agreed) that all Ethiopian university students should have the experience of serving. This evaluation was based almost entirely on concern for the benefits to the individual, such as the new experiences and responsibilities, the knowledge of the life and problems of rural peoples, and the excitement of doing an important job.

Student response also indicates that most of the participants (63 percent) believed that the service would not be successful if made voluntary. They tended to state flatly that people in general, and students in particular, are selfish and, consequently, few would have voluntarily given up a year for the service.

A second major policy question concerns when the students should break their studies for the service. The majority indicated a slight preference for leaving it as it was, after the third year of university study, giving as reasons that post third-year students have greater maturity and training than younger students, combined with the opportunity to return to share their experience with other students. Some noted that they expect to be more responsible students and to learn more from their fourth-year studies as a result of the service. A few pointed out that the university would have less control over the students if the service were postponed until after the fourth year; consequently some might avoid their obligation. However, 41 percent would have preferred to serve after finishing their studies. Some noted that they anticipated difficulties in readjusting to the student role and especially to their lower income as students.

Indications are that the initial resentment toward the program would have been softened if the students had been given more opportunity to participate in the planning. Some felt that the students knew of problems with which the administration was not familiar. They also felt that participation would contribute to greater interest and involvement. However, several participants specifically stated that care should be taken to select only dedicated students for this role and that the students should have an advisory capacity only, with authority left in the hands of the administration.

A final issue of interest to policy planners of service programs concerns the nature of the work assignment. The participants generally felt that non-teaching projects should remain part of the service, although some felt that everyone should teach in view of Ethiopia's great need for expanded educational facilities.

The results in Ethiopia have been highly encouraging. However, the significance of the change in attitude should not mask the fact that a few students remained bitterly resentful throughout the program. In some cases, this seriously detracted from the quality of the service they rendered and created administrative difficulties. Most participants, nevertheless, made every effort to perform to the best of their abilities. Many performed outstandingly in the face of such obstacles as teaching in fields unrelated to their studies and, in some remote areas, teaching without text or reference books, desks, blackboards, or other basic facilities.

In assessing the factors which contributed to the participants' change in attitude, recognition must be given to the fact that the director of the program was an extremely competent administrator, highly respected in the eyes of both students and his university colleagues. His efforts, and those of his assistant, helped to assure participants that their work was appreciated and that they could count on university support when it was required.

It seems relevant to note that initial resentment appears to have been confined to the first group of participants. With the new group, no major resistance was voiced and several students specifically requested difficult assignments in remote areas. Most observers felt that their initial attitudes were even more favorable than the final attitudes of the original group of participants.

Although, to our knowledge, the Ethiopian program is the only service program of its type which is compulsory, the outcome indicates that a compulsory program can result in the same good work and enthusiastic dedication usually associated with voluntary service programs.

[ Excerpted from "Ethiopia's Use of National University Students in a Year of Rural Service," Comparative Education Review, New York: Volume 10, Number 3 (October 1966), pp. 482-492. ]

# BIMAS: AGRICULTURAL STUDENTS AS EXTENSION AGENTS

E. A. Roekasah and D. H. Penny

[In Indonesia, third- and fourth-year agricultural students are working with village farmers to increase rice yields. The key to success is that students live in the villages and work with only a limited number of neighboring farmers. Overexpansion, and consequent dilution, of the program in 1965/66 proved unsatisfactory.]

In 1963, a few young staff members of the College (now Institute) of Agriculture of the University of Indonesia, at Bogor, started the Bimas S. S. B. M. program. (Bimbingan Massal Swa Sembada Bahan Makanan—Mass guidance towards self-sufficiency in food production.) Their basic working hypotheses were 1) that effective agricultural extension work could be undertaken without waiting for the thorough-going institutional changes (e. g., land reform) commonly believed to be a necessary prerequisite to agricultural development, and 2) that students, all of them young and inexperienced men and women, could do effective extension work among farmers, but only if they lived among them.

In the 1963/64 rice-growing season, they put their ideas to the test in three villages in West Java. Twelve fourth- and fifth-year students from

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the college, ranging in age from 21 to 24 years, were sent to live in these villages for the whole of the rice-growing season (October-May). Before the students set out, they were given background information on the villages in which they were to work, some instruction in how to grow rice better, and a detailed outline of how they were to do their work among the rice farmers.

In many ways their extension project was no different from many others that had been sponsored, unsuccessfully, by the Indonesian Department of Agriculture: farmers were shown new and better ways of growing rice; they were encouraged to use selected seed, fertilizer, and pesticides; and every effort was made to ensure that fertilizer and other production requisites would be available to farmers when needed. In addition, credit facilities were made available through the office of the Farmers' Bank and the strengthening of village cooperative societies was stressed.

The differences between the new program and its predecessors were few, but they were crucial:

First, the extension "agents" lived in the villages, usually with the head of the village or a family appointed by him; they worked in the fields alongside the farmers.

Second, each student was permitted to work with only a limited number of farmers whose farms were contiguous.

These two innovations made the difference between success and failure. The students were neither skilled rice technologists nor experienced extension agents, but they were young and enthusiastic. Living in the village as they did, they soon won the confidence of the farmers. A part of their task was to conduct demonstration-type fertilizer and other experiments on farmers' fields, and the joint work they did with the farmers on these experiments helped them to gain the respect of the experienced practical agriculturalists. The requirement that each student should work with no more than fifty farmers whose fields lay in one block of land also meant that the students could get to know the farmers well. It meant, too, that the program was not "diluted"; all too often, past extension efforts had been ineffective because they were spread too thinly. An important by-product of working with a group of neighbors was that it helped the students to organize joint or communal activities—for example, cleaning the irrigation channels—that benefited the whole group.

This pilot project had very gratifying results. The rice production in each of the three "blocks" was more than 50 percent above that recorded by farmers not in the project, and this overall yield

increase was obtained even though not all farmers in each block adopted all the recommended innovations.

Bimas Expanded

The original test project was so clearly successful that the Bimas approach was tried on a greatly expanded scale in 1964/65. All fourth-year agriculture students from Bogor were required to participate; in the other eight colleges of agriculture, third-year students also served, since few more senior students were available. Fifth-year students joined on a voluntary basis. Bimas field work was integrated into the agriculture curriculum, and no student has refused to participate. Through their college committee, the students received transportation costs to their village, a clothing allowance, and a living allowance roughly equivalent to the price of one quintal [ 100 kilos] of paddy.

In 1964/65, the students were placed by a Committee of the Institute of Agriculture in 220 villages, covering 11, 000 hectares. The original work program was retained.

The first Bimas activities had been sponsored by and financed through the Institute of Agriculture, but in 1964/65 the program was placed under the Department of Agriculture. This change had become necessary, in part because the scale of operations had changed, and in part because it was felt that the program would be even more effective if it were backed by the authority of the Department, which was responsible for the all-important fertilizer distribution. According to some partial figures, about 33, 000 rupiahs [ the value of 2. 75 quintals of paddy] per hectare covered was channeled by the Department through the Institute to pay for the students' part in the Bimas program.

In the second year of its life, the Bimas program became better known by its slogan: pantja-usaha (the five-fold way). The five ways to better farming and better village living were:

1) improved water control,
2) use of selected seed,
3) use of fertilizer and pesticides,
4) better cultivation methods,
5) stronger cooperatives.

These five points do, indeed, sum up the aims of the program, but they omit its essence. There is no hint in the slogan that the success of the program rested on the fact that the extension method was very different from what it had been in previous programs.

The value of the Bimas approach can be seen from the experiences some typical students had in trying to get fertilizer supplies to their three villages in North Sumatra. They had taken the precaution to visit the fertilizer warehouse to see the fertilizer before leaving for the villages. But the precautions were in vain, for the fertilizer still did not arrive on time. Students in two of the villages were only able to obtain fertilizer after making special return visits to the provincial capital, where they interceded with the Provincial Governor and the Provincial Head of the Department of Agriculture on behalf of the farmers. In the third, more distant village, the problem was solved by sending a well-documented letter to the parties that had diverted the fertilizer to other areas with the threat that, if fertilizer did not arrive at the village within 24 hours, copies of the letter would be sent to the Provincial Governor, etc.

Farmers in Indonesia do not visit provincial governors nor do they write letters to them. But with the help of the brash and courageous young men who had come to live and work with them, they were finally able to get the fertilizer they were entitled to.

The 1964/65 program was undoubtedly highly successful, despite the recurrence of the supply difficulties that hampered work in the first year. A full evaluation of the program was never carried out, but it would appear that such factors as differences in ethnic culture or in the pattern of land ownership had little influence on the results obtained. Yields on Bimas project fields on Java, where the greatest successes have been achieved, averaged 74.8 quintals of paddy per hectare, as against an average of 31-40 on adjacent fields.

## Bimas Diluted

The 1964/65 effort succeeded because the original modus operandi was retained. In 1965/66, the government decided to expand the program dramatically once again, and about 1,200 students, many of them from such colleges as fishing, forestry, and economics, rather than agriculture, were sent to villages throughout the country. The five-point program was retained, but each Bimas worker was now required to serve eight times as many farmers on average. Instead of 11,000 hectares, 150,000 were covered.

The 1965/66 program produced disappointing results, at least in the sense that yields improved less than previously. (Average yield was under 60 quintals per hectare, according to some figures.) The much diminished success of the 1965/66 program was officially ascribed to the political disruption associated with the abortive coup of late 1965. But the crucial difference was the loss of the key elements of the method of the original scheme.

The 1966 off-season program and the 1966/67 main-season program were again conceived on a grand scale. The main-season target was to serve 1,400,000 hectares; even the 480,000 hectares actually covered by the Bimas program was more than three times that of the previous year. (The reduction was necessitated by the limited amount of fertilizer available, as well as the lack of adequate student supervision.)

The results obtained were in inverse relationship to the size of the program. A Bimas supervisor summed up the 1966/67 program in his area as follows: "The yield did not increase as much as we had hoped, only 0-20 percent. The Bimas workers, mostly second- and third-year students, were not qualified for the job. Preparation for the project was inadequate, and there was not sufficient cooperation between the various government agencies concerned."

## A Return to First Principles?

In April 1967, the Department of Agriculture decided to return to the method that had proven so successful in 1963/64. Only 15,000 hectares will be served in the 1967 dry season, and perhaps 300,000 in the main season, though even this latter figure implies continuing dilution of student effort. The main reasons why the targets were scaled down are 1) the continued inability of the Department to ensure that fertilizer and other supplies will be available when needed, and 2) the realization that only senior students of agriculture—and not junior students of fisheries, for example—should be sent to work in the villages.

## The "Bridge"

Agriculture is a complex industry, and in Indonesia the complexity that derives from differences in soil, climate, and other natural conditions is made even more complex by the very great differences in customs, traditions, and institutions from region to region. No development program is likely to be successful unless it can take into account the variety of conditions faced by each individual farmer.

Before 1962, the College at Bogor had played no part in extension or other development activites, believing that its proper roles were teaching and research. Now the Bimas program provides a necessary "bridge" between the world of the agricultural scientists and that of the rural villagers whose livelihood depends directly on what they can win from the land. The bridge carries other traffic, too. For the first time university students, the future élite of the country, have been given the chance to live and work among farmers and to bring their new understanding back to their college classrooms.

Their classes, in turn, now lay greater stress on intensification of paddy cultivation. The gap between country and city (or between the peasantry and the sophisticated urban élites who make agricultural policy) in Indonesia is wide, and farmers are usually skeptical of the motives of outsiders who come to the villages. The Bimas program has, in a small but significant way, changed the attitudes of farmers towards city people and vice versa. The Bimas program has also served to bridge the gap between farmers and officials. (As we have noted, the fertilizer often would not have reached the farms if the students had not been there to intercede on their behalf.) As one observer has put it: "The combination of active interest by the agricultural colleges, plus the thorough immersion of the students in the planting and harvesting process, made the difference between successful and mediocre results from inputs which were not dissimilar but were differently handled."

Of course, the Bimas program can never, by itself, solve Indonesia's food problem. For one thing, there will not be enough fourth- and fifth-year students to work for even one season in all of Indonesia's villages for many years to come. For another, the program only tackles some of the problems that make agricultural development difficult for Indonesia's farmers. But as the Bimas "bridge" grows bigger and stronger, the dialogue between farmers and agricultural policymakers will make possible the formulation of better policies in the fields of marketing, credit, land tenure, and many others.

[An original article.]

# THE SCOPE FOR A YOUTH LABOUR SERVICE

Christian Uhlig

[It is unlikely that direct returns from youth labour services will ever fully cover expenditures. Gains in increased sense of awareness and responsibility among young people may, however, be reflected later in a more rapidly and steadily growing national product.]

The idea of a national youth labour service, which offers young people the prospect of long-term joint endeavour on a wide range of projects connected with both civic and vocational training, appeals to many developing countries:

1) These countries are often faced with rising unemployment, particularly among the young. With a youth labour service of limited duration it is possible, at least in the transition period, to ease the situation. If the organisation is good, a positive contribution can be made to the national product. Simultaneously, by implanting certain basic skills, there are greater opportunities for the young people to be absorbed later into industry or agriculture.

2) Another task facing any youth service is to create informed community awareness essential for the functioning of a modern state and to ensure that such awareness is firmly rooted in the youthful members of society. Mixing young people of different tribes, religions, races, languages, and

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origins in community camps, where they work to achieve goals of common interest, should promote mutual understanding, awaken interest in national aims, and, hence, create a young élite having the interests of the state at heart.

3) Youth labour services offer young people further possibilities of training and education. The available institutions and training schools are far from sufficient for a speedy elimination of illiteracy and for instilling the basic specialised or technical knowledge necessary for professional ife.

4) Youth services can play an important educational role in the fields of order, discipline, cleanliness, and hygiene. Proper community education could set certain basic standards here.

Possible Fields of Work

What specific economic contribution can be made by such youth services? To begin with, the youth services can direct unemployed youth towards jobs where (after completing their training) they can make a measurable contribution to the growth of the national product. In essence, by investing in short-term training, the government can bring some projects to realisation which might never have been possible under other circumstances.

The National Youth Service in Kenya, for example, has undertaken the following tasks:

- construction of irrigation works and dams;
- planning of nature and wildlife preserves;
- construction of roads and dwellings;
- afforestation and forestry work;
- construction of drainage canals and sanitary installations in towns and in the countryside;
- fire-watching services in forests and country areas;
- opening up land through tse-tse fly control;
- works for general conservation of natural resources.

However, productive assets are also created when youth services simply concentrate on training and education; when they contribute to the civic general education of youth; and when they endeavour to inject young people with a desire for development—this being one of the most important prerequisites for any successful development scheme. The result of such contributions cannot be counted in monetary terms. They are investments towards the faster development of the entire economy.

## The Danger of Over-organisation

Development of a broad-based youth labour organisation is a heavy investment for a developing country. Basic ingredients such as administration, training camps, clothing, tools, etc., have to be procured and qualified leaders and instructors have to be engaged. It is also necessary to prepare projects suitable to be carried out by young people.

The danger—and this comment seems justified by the experience of many African youth service organisations—is that the aims are too comprehensive. Giant organisations are planned and corresponding equipment set up. The result is an overly large administration and installations of which no use is made; this rapidly leads to the total exhaustion of available financial reserves. Even with an organisation planned on a smaller scale there are, in the preliminary stage, no real earnings to be set against the high initial investment.

However, provided the organisation is set up with a reasonable balance, that no over-complicated projects are selected, and, above all, that such projects are clearly and properly planned—and assuming that a country has insufficient employment for its young people, then the mobilised and hitherto underemployed youth should be able to make a considerable contribution to the national product. In this way, heavy initial investment for organisation will ultimately be offset by real profit.

It is unlikely that direct returns resulting from youth services will ever fully cover expenditures. However, the advantages that developing countries could derive from efficient communal education directed at developing national awareness and responsibility, the prevention of illiteracy, improvement of professional training, and, above all, the creation of a reliable wish to develop the economy—taken together, these amount to considerable positive contributions in economic terms. Indeed, the qualitative results of a youth labour service find their quantitative expression only at a later date, in the form of a more rapidly and steadily growing national product.

[Excerpted from "The Economic Significance of Voluntary Youth Services in Developing Countries," Intereconomics, Hamburg: Number 4 (April 1966), pp. 17-21.]

# INDEX TO VOLUME V - 1967

NOTE: Volume V contains only three issues—
April (No. 1), July (No. 2), and October (No. 3), 1967.
Volume VI will begin with January 1968.

Subject


Administration
  Network Analysis
    2:1-30
  Tax Administration
    3:72-75
Africa
  1:123-132, 134-135
Asia
  2:70-81
Agriculture
  Extension
    3:106-111
  Food Production
    2:31-48
  Irrigation
    3:25-44
  Land Settlement
    1:70-79, 81-115
  Research
    1:123-132, 2:46-48

Bolivia
  1:89-100

Caribbean (East)
  2:63-69, 82-86
Colombia
  3:39-44

Development, General
  1:1-7

Ecuador
  1:53-58
Education
  3:99-105
Ethiopia
  3:99-105

Exports
  Promotion
    2:89-120
  Taxes
    2:109-118, 3:76-82
  Tourism
    2:49-88
External Aid
  Coordination
    1:15-30
  Export Credits
    2:121-124
  General
    3:1-24
  Planning, in the context of
    1:8-14

Fiscal Policy
  Current Public Expenditures
    3:57-72
  Financing Public Utilities
    3:54-56
  Taxation
    2:109-118, 3:57-91

Guatemala
  3:50-53

Honduras
  3:87-89

India
  3:35-38
Indonesia
  3:106-111
Israel
  1:70-79

Kenya
3:22-24
Korea, South
3:22-24

Latin America
2:100-105
Lebanon
1:60-69

Malaysia
1:109-115
Manufacturing
Entrepreneurship
1:60-69, 134-135
Technology
1:31-58

Nigeria
1:101-108, 134-135

Pakistan
3:22-24
Planning
General
1:8-14, 133-134

Network Analysis
2:1-30

Research
1:117-132

Singapore
2:109-118

Taiwan
3:22-24
Thailand
1:26-30
Tourism
2:49-88
Transportation
1:45-52

Water Resources
Community Water Supply
3:45-56
Irrigation
3:25-44

Youth Services
3:93-114

## Reviews

The Economist: "Aid that Works" (Series), 3:22-24

Fernando, E. P. C.: Implementation of Industrial Development Programmes, 2:29-30

IBRD: Suppliers' Credits from Industrialized to Developing Countries, 2:121-122

Kilby: African Enterprise: The Nigerian Bread Industry, 1:134-135

Lewis, W. A.: Development Planning, 1:133-134

UN: Export Credits and Development Financing, 2:121-122

## Authors


Abrams, Eugene
1:26-30
Adler, John H.
1:1-7
Aris, Danilo
3:50-53

Bhatia, K. M.
3:35-38
Bernstein, F.
1:70-79
Bottomley, Anthony
1:53-58
Brown, Lester R.
2:31-39

Capital (Calcutta)
2:106-108
Carlin, A. W.
3:16-21
Chelliah, R. J.
3:72-75
Christodoulou, D.
1:82-88
Clement, Harry G.
2:70-81

Due, John F.
3:87-89

Farmer, Richard N.
1:39-44
Fischnich, O. E.
2:40-45

Gadgil, D. R.
1:32-38
Geiger, Theodore
3:7-10
Goode, Richard
3:76-82
Grasberg, Eugene
2:1-28

Hanna, Willard A.
1:109-115

Haq, Mahbub ul
1:8-14

Khalaf, Samir
1:60-69
Kornfeld, Leonard
1:16-25
Korten, David C.
3:99-105
Korten, Frances F.
3:99-105

Lent, G. E.
3:76-82
Linares, Adolfo
1:89-100

McJunkin, F. E.
3:45-49
McKinnon, Ronald I.
2:109-118
McLoughlin, Peter F. M.
1:123-132
Meyer, John R.
1:45-52

Ojha, P. D.
3:76-82
Okediji, Oladejo O.
1:101-108
Okun, D. A.
3:45-49

Penny, D. H.
3:106-111
Pincus, John
3:1-6
Please, Stanley
3:57-62

Roekasah, E. A.
3:106-111
Rossillion, C.
3:93-97

Sargent, J. R. (2)
2:63-69, 82-86
Sen, B. R.
3:25-29
Shwayri, Emilie
1:60-69
Singer, Hans W.
3:11-15
Strasma, John
3:83-86

Thome, Joseph R.
3:39-44
Thorn, Richard S.
3:63-71

Uhlig, Christian
3:112-114
United Nations (Dept. of Econ.
2:100-105 & Social Affairs)

Waters, Somerset R.
2:57-61
Weintraub, D.
1:70-79
Wolfson, Margaret
2:50-56
World Bank Staff
3:54-56

Yang, Shu-Chin
2:89-99

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